AUSFILM

AUSTRALIAN SCREEN INDUSTRY ROLES

VFX, ANIMATION & VIRTUAL PRODUCTION

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SECTION 1/
INTRODUCTION

DOCUMENT STRUCTURE

This resource has five sections:

Section 1 outlines the rationale and aims for this publication, and how to navigate the document.
Section 2 contains sample crew hierarchy maps for each department.
Section 3 provides industry role descriptions and are categorised by departments.
Section 4 contains links to Australian Industry Guilds and other industry career resources.
Section 5 contains an index of industry roles listed alphabetically by department in Visual Effects (VFX), Animation, and Virtual Production (VP) industries.

HOW TO USE THIS DOCUMENT

This resource lays out department structures and job descriptions of hundreds of roles in Australia's film and television industry (Visual Effects (VFX), Animation, and Virtual Production (VP)). It aims to build awareness of screen careers and demystify the department structures to help individuals navigate career paths. A separate document titled *Australian Screen Industry Roles: Physical & Post Production* outlines roles and department structures in these departments.

Screen credits are an essential requirement for working in the industry but knowing where to start can be difficult. Entry-level roles are more often available on large budget and/or international productions as these have the budgets to allocate to assistant roles. Each production will organically form its departments differently depending on the needs associated with the story and production. **Therefore, *sample* crew hierarchy maps have been included in this resource as a *guide only*,** to assist in illustrating career pathways and potential team structures.

You can use the Sample Hierarchy maps to identify the role (or roles) that are of interest.

The Index of Industry Roles contains the page number where you can read about the role description, as well as the description of roles that have close working relationships with that role.

Further information about the department that the role works within is available in the Links to Industry Guilds and Career Resources section of this document.

AUSTRALIA'S VISUAL EFFECTS (VFX), ANIMATION & VIRTUAL PRODUCTION (VP) WORKFORCE

The VFX, Animation & VP workforce comprises approximately 250 roles. Industry-recognised roles have been categorised by Departments, reflecting the reporting lines for each role. Under each role, information about the core competencies and personal attributes that are likely to be compatible with the role have been included.

Pathways to screen careers involve on-the-job training to gain hands-on experience, screen credits, and networks. Working in the screen industry requires deep collaboration and communication to facilitate the flow of information and collectively problem-solve situations as they arise.

The Screen Sector employed 37,600 people in Motion Picture and Sound Recording Activities in 2021[1], injecting $2.29B into the economy via production spend in 2021-22[2] on Domestic and International Production in Australia. The rapid growth of the sector, coupled with a continuous pipeline of work in the industry, is providing a once-in-a-generation opportunity to scale up the screen workforce through critical on-the-job training opportunities.

The Australian screen sector workforce is supported by industry guilds and networks, government screen agencies, and production-based training institutions, many of whom have contributed to this resource.

Thank you to the contributors to this document who have generously provided insights and suggestions.

[1] National Industry Insights website. https://nationalindustryinsights.aisc.net.au/industries/arts-culture-entertainment-and-design/screen-and-media. Accessed 17/11/2022.
[2] Screen Australia website. The Drama Report 2021/22. https://www.screenaustralia.gov.au/fact-finders/reports-and-key-issues/reports-and-discussion-papers/drama-report. Accessed 17/11/2022.

SECTION 2/ DEPARTMENT HIERARCHY MAPS

DISCLAIMER

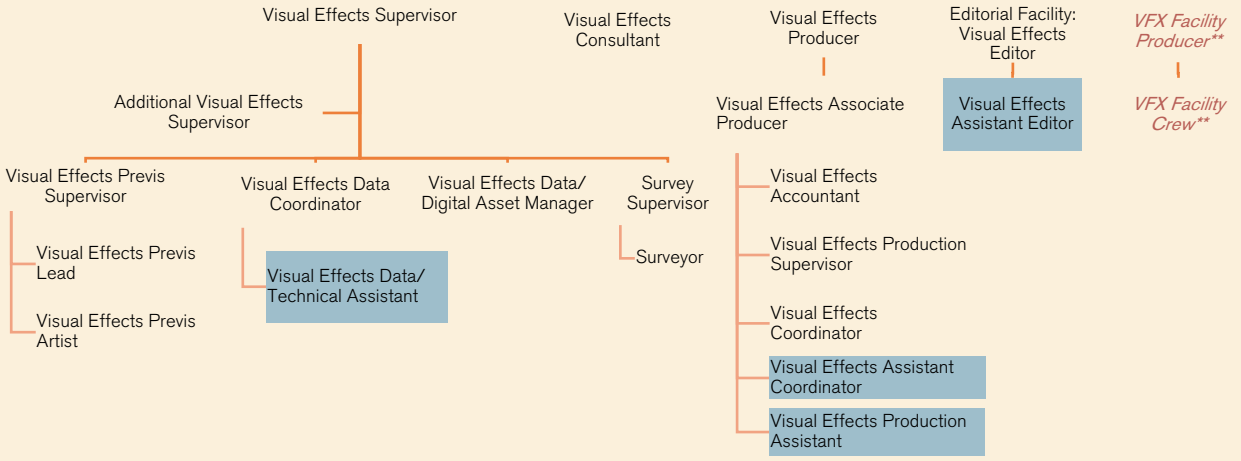
The following crew hierarchy maps are **examples only** and are designed to illustrate potential career pathways, team structures and the flow of information within teams. No individual on a Visual Effects (VFX), Animation or Virtual Production (VP) project operates in a silo. Crew members are constantly engaging in fluid conversations with others as there is a high level of interdependency between roles and across different departments on every production.

Note that *Assistant* or *Trainee* roles have been highlighted in BLUE. Check with your local state or territory screen agency for attachment opportunities, many of which are made possible through generous rebates and incentives administered by the Australian Government and state/territory agencies. To illustrate all the possible roles of a given department, the example hierarchy maps reflect department structures for large-scale productions, as these types of productions will hire the largest range and number of crew. In smaller studios, a number of roles will be rolled into one.

VISUAL EFFECTS (VFX) DEPARTMENTS

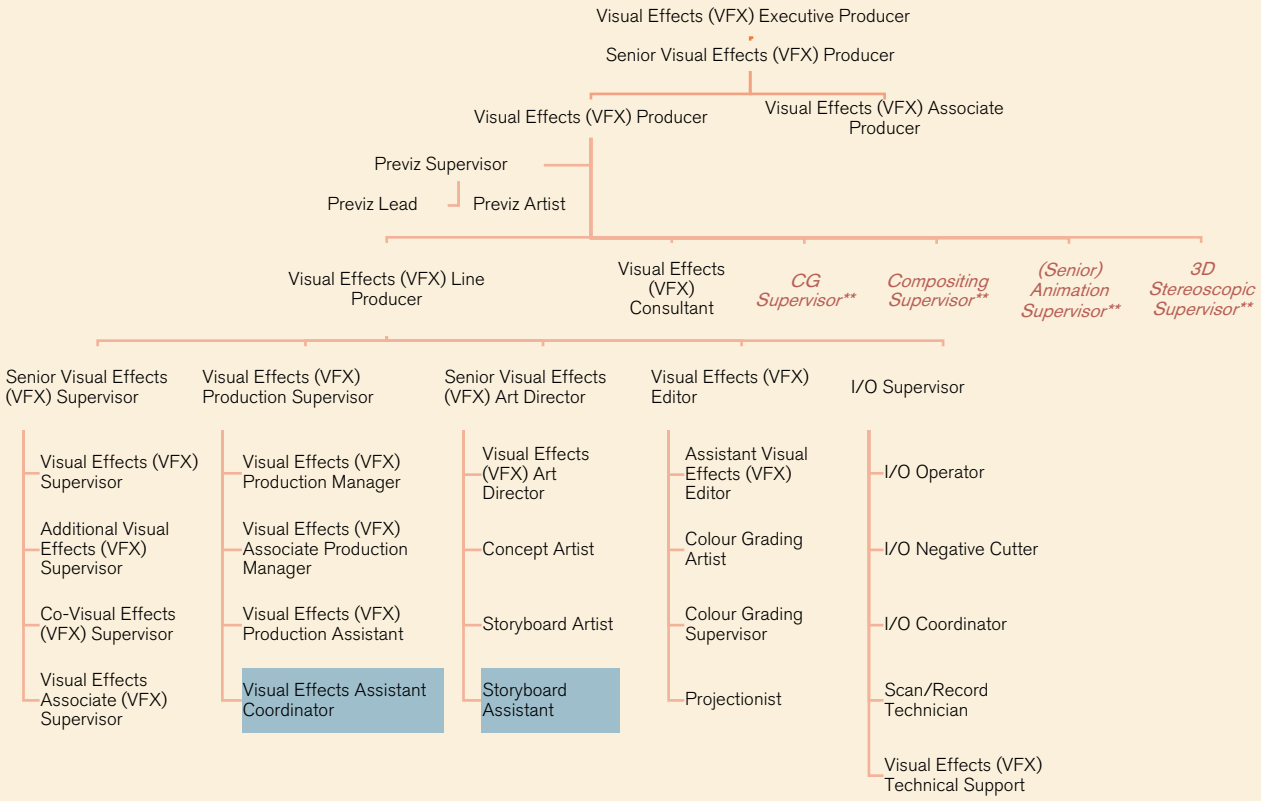
VFX department hierarchies vary from project to project depending on the needs of each production, and are impacted by the nature of the screen businesses providing the expertise, and the scale, scope and complexity of the work required.
While VFX production very often includes animation, a live-action principle photography requirement is most commonly the defining difference.[3]
The hierarchies visualised below are general examples based on roles that are listed by the Visual Effects Society (VES) and are a guide only.

VFX PRODUCTION: EXAMPLE A



*** See FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 1) and (Part 2)*

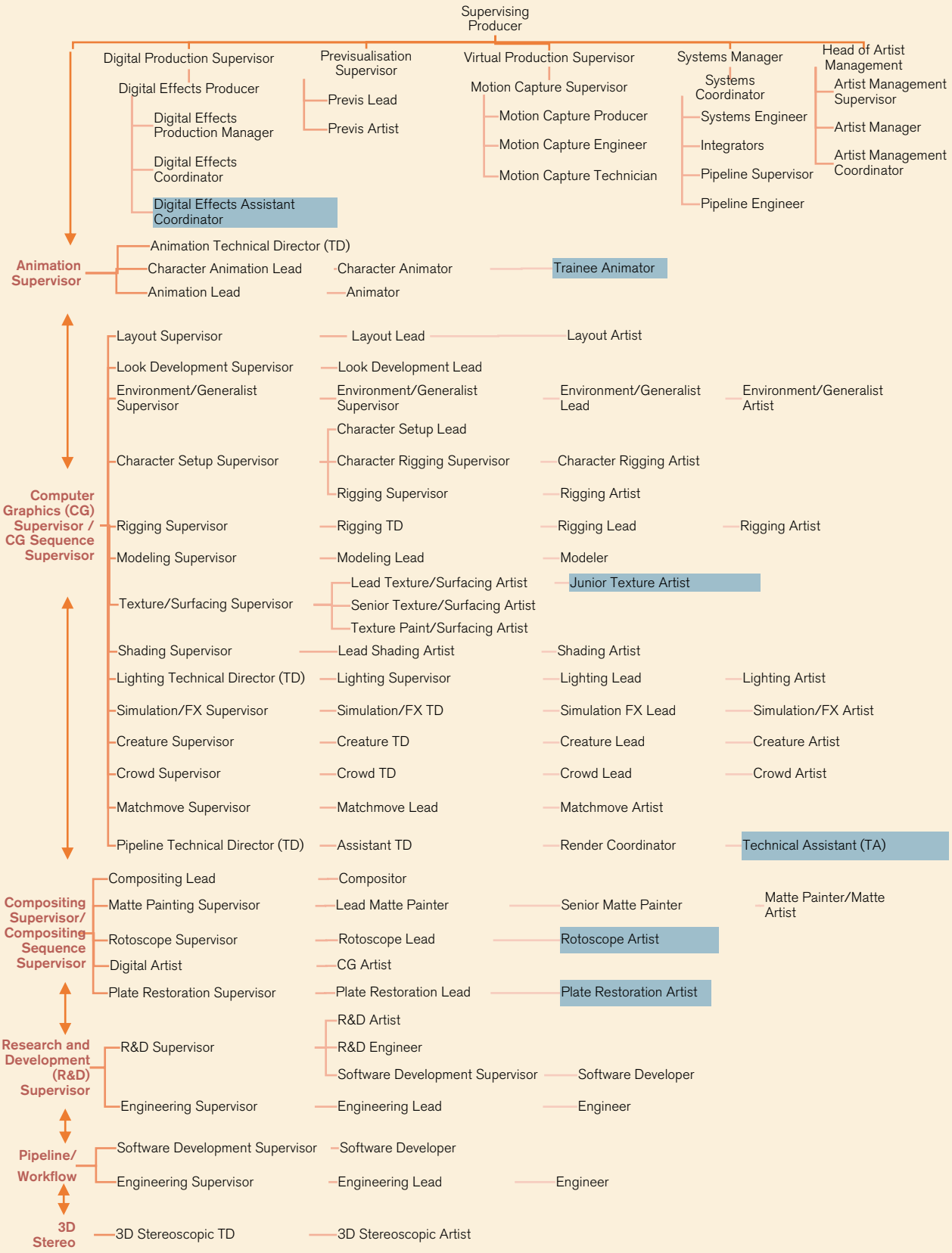
FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 1)



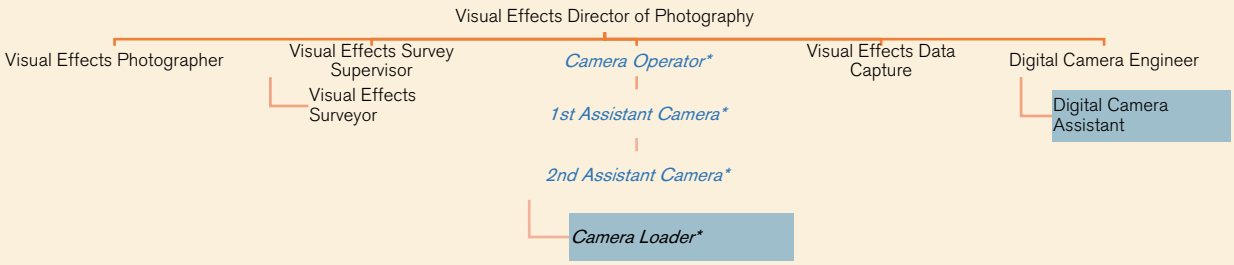
*** See FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 2)*

[3] Consultation feedback from Krista Jordan, Australian Film Television and Radio School, 2023.

FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 2)

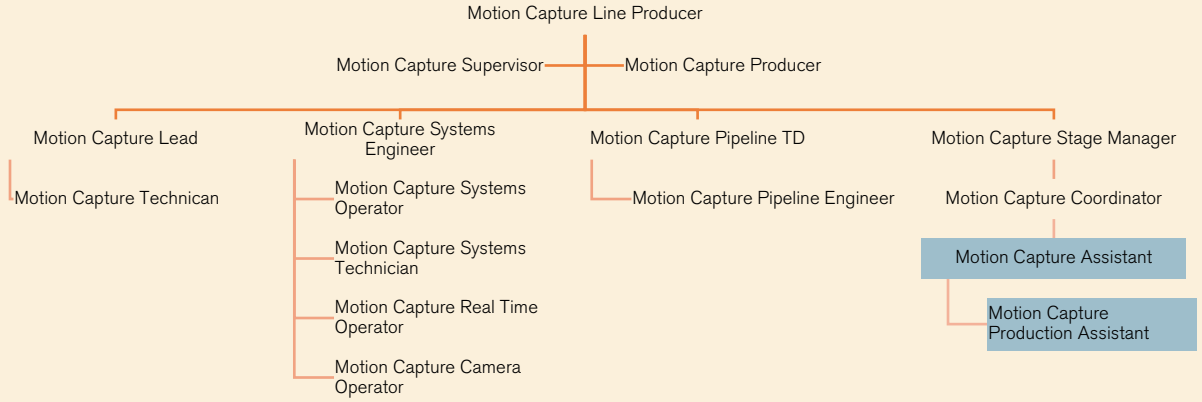


PHYSICAL VFX PRODUCTION: EXAMPLE D



** These roles are listed in a separate Physical & Post Production Crew Roles document*

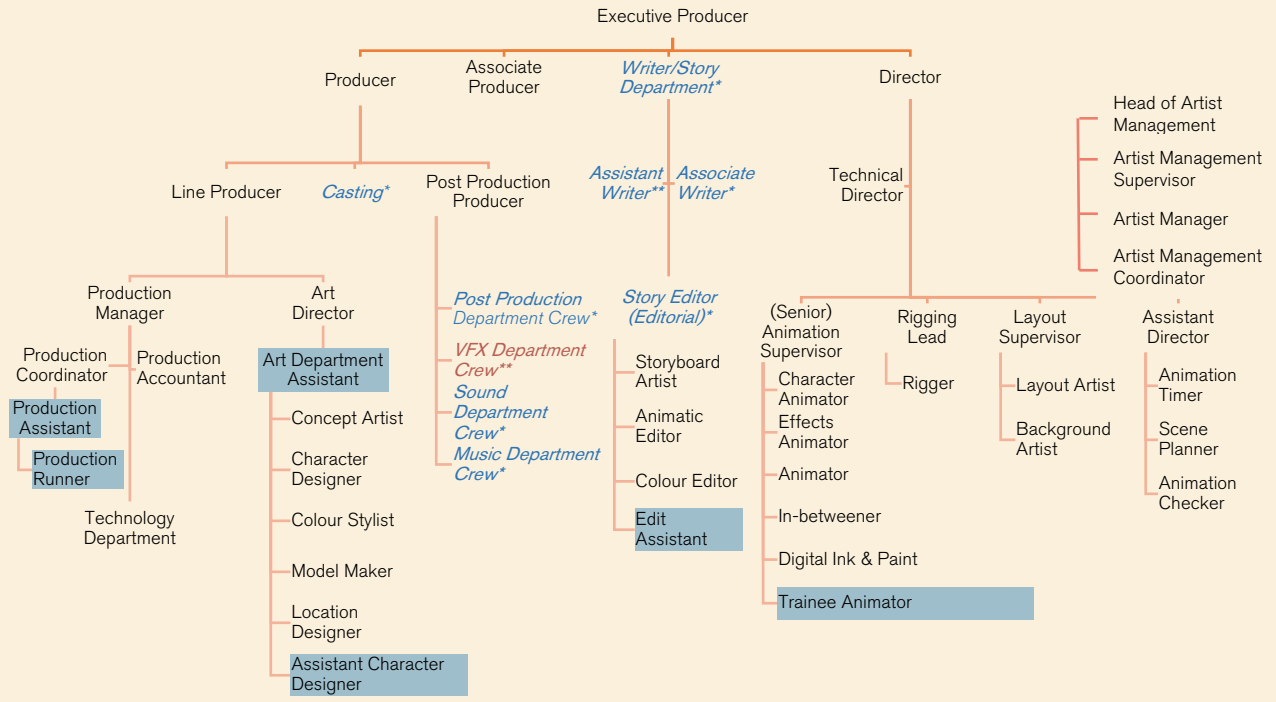
MOTION CAPTURE / PERFORMANCE CAPTURE PRODUCTION: EXAMPLE E



ANIMATION PRODUCTION

The animation department hierarchy examples below "differ from those for VFX production as they describe screen projects where no live-action principle photography is required."[4]

2D (TWO-DIMENSIONAL) ANIMATION PRODUCTION: EXAMPLE F

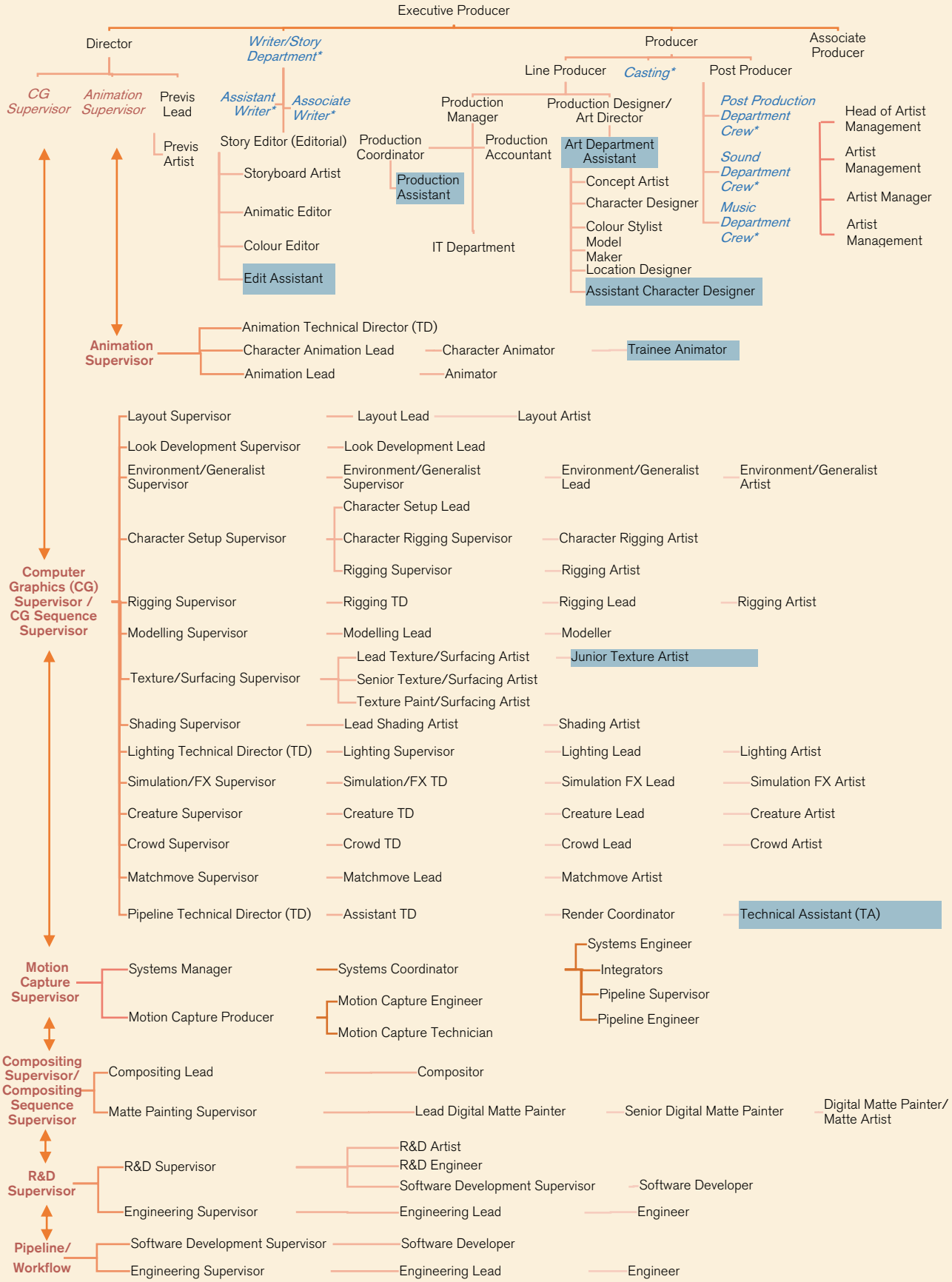


** These roles are listed in a separate Physical & Post Production Crew Roles document*
*** See FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 2)*

See the following page for an example 3D Animation hierarchy.

[4] Ibid

3D (THREE-DIMENSIONAL) ANIMATION PRODUCTION: EXAMPLE G

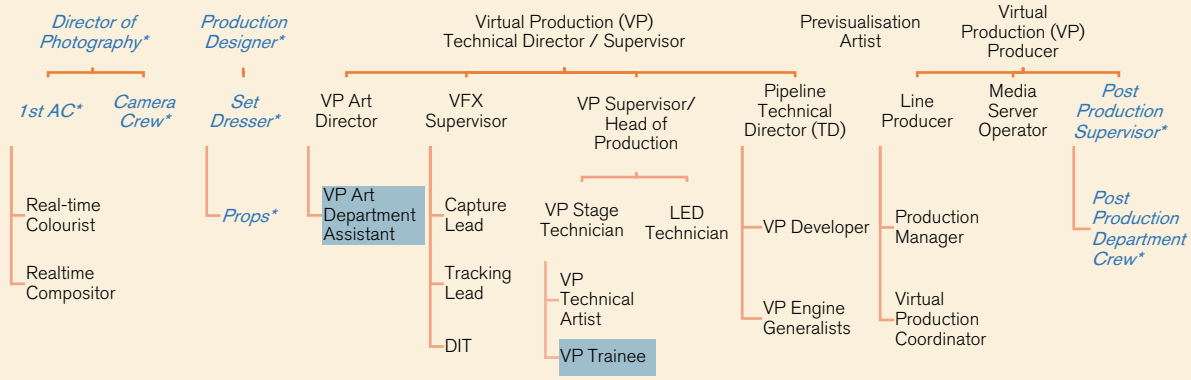


** These roles are listed in a separate Physical & Post Production Crew Roles document*

VIRTUAL PRODUCTION

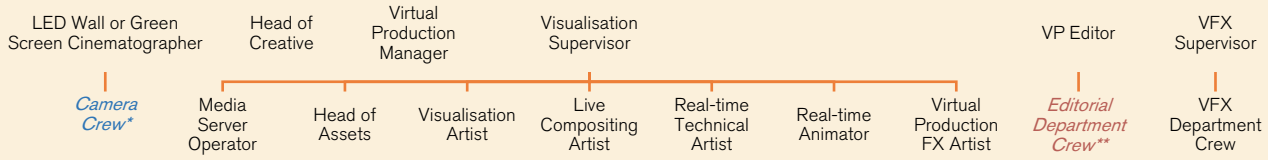
The following hierarchies are derived from the VES Guild of America's webinar "Virtual Production is Production"[5] and focuses on on-set roles, as opposed to Asset Creation and Scene Production roles. Definitions for these terms are available in the Virtual Production Field Guide[6] and the Virtual Production Field Guide 2[7] publications by Epic Games. Example hierarchies are illustrated below, but will vary from project to project, depending on creative and technical requirements. It is intended as a guide only.

LED VOLUMES/ IN-CAMERA VISUAL EFFECTS (ICVFX): EXAMPLE H



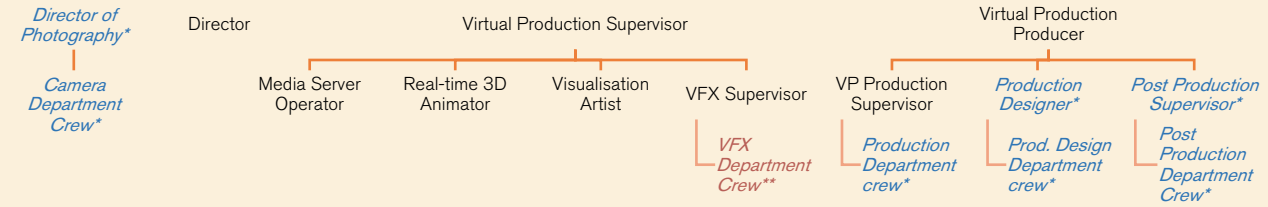
** These roles are listed in a separate Physical & Post Production Crew Roles document*

REALTIME COMPOSITING/ VISUALISATIONS TEAM: EXAMPLE I



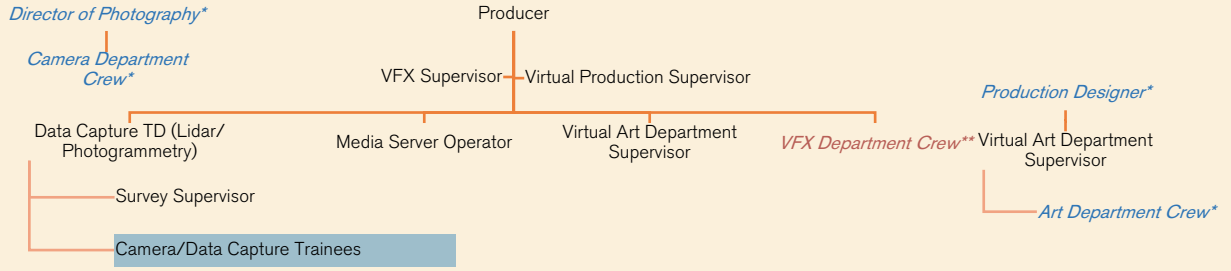
*** See the Editorial Department roles under ANIMATION: EXAMPLE F and G*

REALTIME ANIMATION/ SIMULCAM (SIMULATED CAMERA) TEAM: EXAMPLE J



** These roles are listed in a separate Physical & Post Production Crew Roles document*
*** See FACILITY BASED VFX PRODUCTION: EXAMPLE B (Part 2)*

WORLD CAPTURE TEAM: EXAMPLE K



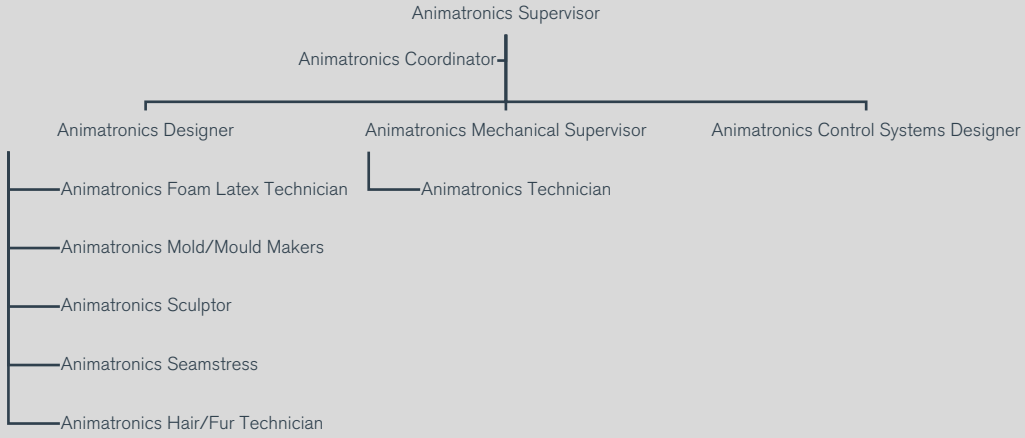
** These roles are listed in a separate Physical & Post Production Crew Roles document*
*** See FACILITY BASED VFX PRODUCTION: EXAMPLE B (part 2)*

[5] Visual Effects Society Vimeo channel. Virtual Production is Production. https://vimeo.com/583497815. Accessed 12/12/2022.
[6] Noah Kadner. The Virtual Production Field Guide. Volume 1. Presented by Epic Games 2019. https://cdn2.unrealengine.com/vp-field-guide-v1-3-01-f0bce45b6319.pdf. Accessed 12/12/2022.
[7] Noah Kadner. The Virtual Production Field Guide. Volume 1. Presented by Epic Games 2021. https://cdn2.unrealengine.com/Virtual+Production+Field+Guide+Volume+2+v1.0-5b06b62cbc5f.pdf. Accessed 12/12/2022.

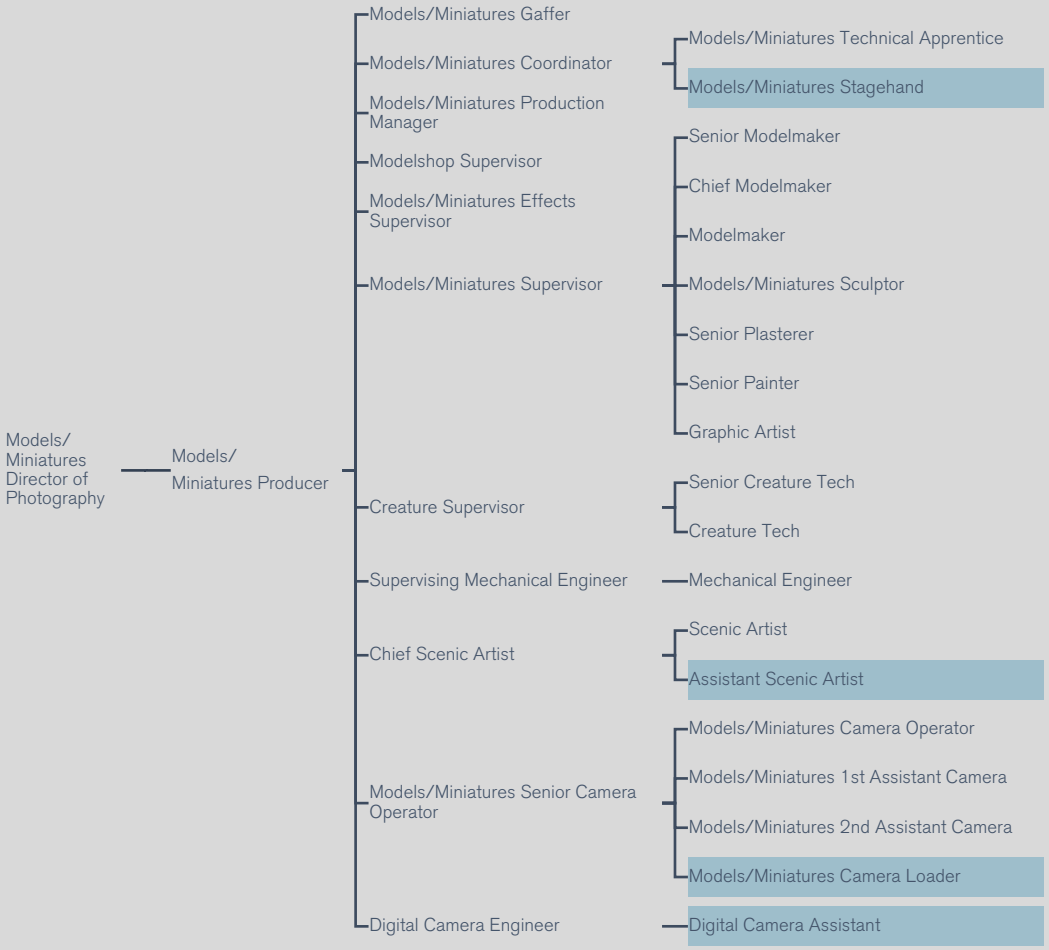
OTHER VISUAL EFFECTS CREW ROLES

The following Visual Effects crew roles are generally not available in Australia. They have been included for reference only as they are listed on the Visual Effects Society (VES) Handbook of Visual Effects: Industry Standard VFX Practices and Procedures (2nd Edition).[8] Descriptions for these roles have not been included in the document.

ANIMATRONICS UNIT

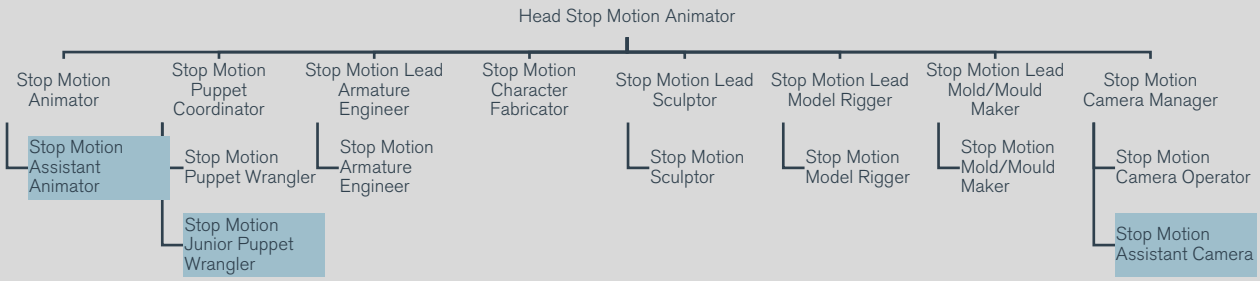


MODELS/MINIATURES UNIT



[8] Zwerman, Susan, and Jeffrey A Okun. The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures. Oxford: Taylor and Francis, 2014. Web.

STOP MOTION UNIT



SECTION 3/ ROLE DESCRIPTIONS

DISCLAIMER

The information in this document has been compiled from a range of sources and has been reviewed by industry professionals. However, the scope of work for the listed roles may vary depending on the type of production format (e.g., commercials, documentaries, episodic, or features) and production/facility. Employment arrangements in the industry may range from freelance work to longer-term contracts.

A NOTE ABOUT VISUAL EFFECTS (VFX), ANIMATION & VIRTUAL PRODUCTION (VP) DEPARTMENT ROLES

Roles in 2D and 3D Animation Studios, VFX Facilities, and Virtual Production Facilities are categorised by Departments and are listed in Alphabetical order (see below).

The departments listed in this document include:

1. 2D & 3D Animation Departments:
    1.1. 2D & 3D
    1.2. 2D
2. 2D Visual Effects (VFX) Departments:
    2.1. Compositing
    2.2. Digital Matte Painting
    2.3. Paint & Roto
3. Computer Graphics (CG) Departments:
    3.1. Environment/Generalist
    3.2. Layout
    3.3. Lighting
    3.4. Look Development
    3.5. Modelling
    3.6. Previsualisation
    3.7. Shading
    3.8. Texturing
    3.9. Tracking (Matchmove)
4. Computer Graphics (CG) Technical Departments:
    4.1. Technical Directing
    4.2. Creature
    4.3. Crowd
    4.4. Effects (FX) & Simulation
    4.5. Pipeline Engineering
    4.6. Rendering
    4.7. Research & Development
    4.8. Rigging
    4.9. Stereoscopic 3D
5. Editorial
6. Producing
7. Production Departments:
    7.1. Production: Production Management
    7.2. Production: Motion Capture (MoCap)
    7.3. Production: On-Set VFX
    7.4. Production: Real-Time & LED Wall In-Camera VFX (ICVFX)
8. Production Departments (Other):
    8.1. Art Department
    8.2. Data Capture & Management
    8.3. I/O
9. Screenwriting
10. Department roles not covered in this document
    10.1. Animatronics
    10.2. Miniatures
    10.3. Stop Motion

NB. Roles within Physical Production departments can be found in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document.

VISUAL EFFECTS (VFX), ANIMATION & VIRTUAL PRODUCTION (VP) DEPARTMENT ROLES

1.1/ 2D & 3D ANIMATION DEPARTMENTS

Director (aka Animation Director)

Animation Directors are responsible for the creative vision of an animated project from preproduction to post, including character performance, creative direction, and the project's visual and audio style. They manage creative teams and ensure that the crew works towards the same creative vision by developing guides called "animation bibles" (which outline story summary, character information, and breakdown, style and tone, any other information that supports the world-building process) and continuously guiding and checking the work of their teams. Animation Directors have strong animation, storytelling, and management skills.

Personal attributes that are needed to succeed in this role include:

- Leadership including the ability to nurture talent
- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Assistant Director

Assistant Directors in animation support the Director. They need excellent communication and organisational skills, as well as strong animation, storytelling, and collaboration skills. This is a creative leadership role.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Senior Animation Supervisor

Senior Animation Supervisors are engaged on larger VFX/VP projects and oversee the teams responsible for generating animation elements of a production. They work with Animation Supervisors and are responsible for approvals for each stage of the animation process to ensure the quality of the work including character design, animation style, facial rigs, character rigs, etc. They work closely with the CG Supervisor, Rigging Supervisor, and VFX Supervisor. The Senior Animation Supervisor attends dailies to review shots with the Director and Supervision team for quality control and continuity. They manage schedules, communication, and the Animation team.[9] They mentor their teams and oversee any outsourced work.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

[9] Careers in Screen website. Animation Director. https://www.careersinscreen.ie/role/animation-director/. Accessed 1/2/2023.

Animation Supervisor

The Animation Supervisor is responsible for approvals for each stage of the animation process to ensure the quality of the work including character design, animation style, facial rigs, character rigs, etc. They work closely with the CG Supervisor, Rigging Supervisor, and VFX Supervisor. The Senior Animation Supervisor attends dailies to review shots with the Director and Supervision team for quality control and continuity. They report to the Director and Producer, but on larger projects, they may report to the Senior Animation Supervisor.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Animation Lead (aka Lead Animator)

The Animation Lead reports to the Animation Supervisor. They are responsible for establishing and maintaining the quality, style, pacing, and animated performances executed by their team(s). This is both a creative and technical role. They provide notes and feedback to their team(s) and supervisors about animated sequences. They work with producers and other supervisors to manage the schedule and deadlines.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Animator

Animators are involved throughout all stages of production – from preproduction, production, and post production, to oversee the quality and consistency of the animation style and tone. This includes character design, storyboarding, directing voice-over performances and recordings, lip-syncing, and rendering. They work closely with the Director/Producer and attend dailies to take notes and feedback.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Trainee Animator

2D Animators need strong drawing skills and an understanding of the principles of animation. They set up exposure sheets (X-Sheets), set timing, break down dialogue and prepare elements for compositing. Trainee Animators work closely with Directors/Clients/Writers to ensure that the style and mood are expressed in storyboards, artwork, and animation.

3D Animators need high levels of competency in 3D software in addition to an understanding of the principles of animation. They need to be able to think spatially and understand camera lens characteristics.

Both 2D and 3D Animators have an "advanced concept of visual language - perspective, point of view, proportion, colour, composition, framing, etc. [and a] working knowledge of the laws of physics - gravity, acceleration, and the laws of energy.[10]

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Character Animation Lead (aka Lead Character Animator)

The Character Animation Lead has a strong understanding of performance, physics, anatomy, and story. They are responsible for establishing character animation styles to communicate the unique personality of each character in an engaging and memorable way. This may include styles for poses, facial expressions, body language, reactions, and other physical traits that communicate the personality of a character. The supervise Character Animators to ensure that each animated character is animated consistently throughout the project.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Character Animator

Character Animators are responsible for producing "believable, engaging, and relatable animations […] and instilling 'humanity' through expression, pose, body language, etc. to evoke empathy in the audience or player."[11] They lip-sync to dialogue, interpret storyboards to animated character sequences, manage files and assets, and research performances and anatomy to create convincing characters.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

[10] CG Spectrum website. Career Pathways: 3D Animator. https://www.cgspectrum.com/career-pathways/3d-animator. Accessed 1/2/2023.
[11] CG Spectrum website. Career Pathways: Animation Careers. https://www.cgspectrum.com/career-pathways/character-animator. Accessed 1/2/2023.

Character Designer

Character Designers specialise in interpreting the Writer/Director's vision of characters into character illustrations. Working closely with the Director, they visualise the key physical attributes of the character and illustrate how the character would move through key poses and actions. "Once a design has been approved, character designers create 'model sheets' which show the character from different angles. In 3D animation, these will be used by the modellers to create the characters. In 2D animation, the animator uses the model sheets."[12] Larger projects may engage Senior Character Designers to oversee the Character Design department.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Assistant Character Designer

Assistant Character Designers provide both creative and administrative support to the Character Designer. They assist in the creation and design of model packs (including turnaround model sheets, action and acting post sheets, expression model sheets, hand charts, and mouth and eye charts). They are responsible for clean-ups and colour based on the approved colour scheme. They may also design incidental characters.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling, acting, and performance
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Ability to ask questions when unsure
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

[12] ScreenSkills website. What does a character designer do? https://www.screenskills.com/job-profiles/browse/animation/pre-production/character-designer/. Accessed 23/12/2022.

1.2/ 2D ANIMATION SPECIFIC ROLES

In-betweener

In-betweeners work in 2D animation as artists that draw frames that make up the movement in animation. Animators create keyframes that block out the movement of characters, whereas In-betweeners add additional frames to make the movement seamless and flowing. In-betweeners "decide how animated characters will move when transitioning between major key movement scenes."[13] In-betweeners are highly skilled at drawing and need to have precision in rendering and line drawing to ensure that the animation is seamless.

Personal attributes that are needed to succeed in this role include:

- A passion for drawing and technical illustration
- Passion for acting and performance
- Understanding of physics and movement
- Strong communicator, problem-solver and collaborator
- Excellent listener and observer
- Patience and resilience
- 2D and/or 3D animation software skills including high levels of digital literacy

Digital Ink & Paint

In traditional 2D animation, the Ink & Paint artist painstakingly added fine lines and colour to the animation cels (frames). In contemporary practice, animation software is used to digitally ink & paint frames. Digital Ink & Paint artists may be engaged to clean, ink, and paint each frame in accordance with the visual style and direction of the animated production.

Personal attributes that are needed to succeed in this role include:

- A passion for drawing and technical illustration
- Passion for colour and visual design
- Strong communicator, problem-solver and collaborator
- Excellent listener and observer
- Patience and resilience
- 2D and/or 3D illustration software skills including high levels of digital literacy

Background Artist (aka Background Designer)

The 2D Background Artist works with the Director to design the backgrounds based on the script and storyboard. Once the design is approved by the Director, the Background Artist may work with the Layout Artist to refine the artwork according to the requirements of perspective and framing. Background Artists have a strong "knowledge of environments, understand architecture, have a good awareness of city spaces and countryside landscapes."[14]

Personal attributes that are needed to succeed in this role include:

- A passion for drawing and technical illustration
- Passion for colour, visual and spatial design
- Strong communicator, problem-solver and collaborator
- Excellent listener and observer
- Patience and resilience
- 2D and/or 3D illustration software skills including high levels of digital literacy

[13] Animation Career Review website. Inbetweener – Career Profile. https://www.animationcareerreview.com/articles/inbetweener-career-profile. Accessed 1/2/2023.
[14] Screenskills website. Animation: Background Designer. https://www.screenskills.com/job-profiles/browse/animation/pre-production/background-designer/. 1/2/2023.

Effects (FX) Animator (manual/practical)

2D Effects Animators specialise in animating non-character elements such as water, explosions, fire, wind, etc. They observe natural phenomena and render effects to enhance the story, mood, or drama for animated productions. 3D Effects Animators use computer simulation to create effects. See the entry for 3D Effects Animation under *CG: Technical: Effects (FX).*

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling
- Understanding of physics, chemistry, and movement
- Strong communicator, problem-solver and collaborator
- Excellent listener and observer
- Patience and resilience
- 2D animation software skills including high levels of digital literacy

Scene Planner

The Scene Planner works in a 2D animation studio. They are responsible for ensuring a smooth and seamless workflow by organising and setting up production files and assets to be ready for use by the Animator. This is a technical role that supports the animation pipeline and may involve technical troubleshooting and importing and exporting different file formats.

Personal attributes that are needed to succeed in this role include:

- Technically oriented and logical
- Strong communicator, problem-solver and collaborator
- Attention to detail
- Excellent listener and observer
- Patience and resilience

Animation Checker

Animation Checkers are a technical administration role that is responsible for ensuring that all production material is tracked, and delivered consistently and completely, checking that all scenes, storyboards, and animatics are up to date, ensuring that scene numbers, scene notes, effects, etc. are consistent and matching across the storyboard, X-sheet, animatic, and scene cuts. This role involves skills in information management, inter-departmental communication, and accuracy.

Personal attributes that are needed to succeed in this role include:

- Technically oriented and logical
- Strong communicator, problem-solver and collaborator
- Attention to detail and accurate
- Excellent listener and observer
- Patience and resilience

Animation Timer (aka Sheet Timer)

The Animation Timer works with the Timing Supervisor and Director. The role derived from a model where studios outsourced animation to a 3rd party organisation and had to provide written notes about animation and animation timing. The Animation Timer uses storyboards to work out the timing of the action and dialogue on finished X-sheets. Animation Timers work with the X-sheets, storyboard, character, and prop model sheets, background designs, script, audio recording, and animation to devise instructions for the Animators.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling
- Strong communicator, problem-solver and collaborator
- Understanding of physics and movement
- Excellent listener and observer
- Patience and resilience
- Attention to detail

2.1/ 2D VISUAL EFFECTS (VFX): COMPOSITING DEPARTMENT

Compositing Sequence Supervisor

The Compositing Sequence Supervisor is a senior compositor who is responsible for compositing sequence continuity. They may sometimes work on set with the VFX Supervisor to lay out backgrounds while filming and act as a conduit between physical production and the Compositing team. Compositors should have a strong understanding of photography.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

Compositing Supervisor

The Compositing Supervisor leads the Compositing (2D) Department and team. They have oversight over the quality of the compositing work and the development of the compositing (2D) pipeline, working closely with the VFX Supervisor, CG Supervisor, and Producer. They manage the department schedule, budget, and work allocation. They attend dailies with the compositing team and may also work on-set as a VFX Supervisor on projects requiring compositing. This is both a creative and technical role. Compositors should have a strong understanding of photography and cinematography.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

Compositing Lead

The Compositing Lead works closely with the VFX Supervisor and CG Supervisor to seamlessly composite different elements to complete VFX shots and sequences both creatively and technically. The Compositing Lead is responsible for ensuring the aesthetic and technical quality of the composited shots and works with other departments to identify and develop the technical tools and workflow to achieve the desired result. This is a creative and technical role that requires time management and people management skills. Compositors should have a strong understanding of photography and cinematography.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

Compositor

Compositors are responsible for combining and manipulating different visual elements (assets) to create a seamless and cohesive shot. Compositors need to be able to interpret a script and translate the director's vision into their compositions. In addition to the combination of different visual elements, their work may involve enhancing atmospheric elements, drawing the viewer's eye to key areas of the screen through the manipulation of lighting, colour, or lens distortion, or transforming a scene from one time of the day to another. Compositors often work at the tail end of the pipeline, so this role can be stressful due to time pressures and last-minute changes or fixes to a scene. This is primarily a creative role that requires time management and people management skills. Compositors should have a strong understanding of photography and cinematography.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

2.2/ 2D VISUAL EFFECTS (VFX): MATTE PAINTING DEPARTMENT

Matte Painting Supervisor (aka Matte Supervisor, Digital Matte Supervisor, Digital Matte Supervisor)

Matte Painting Supervisors work closely with the CG Supervisor and Production Supervisor. They lead teams to create backgrounds, set extensions, 2.5D projections designed by the Director, VFX Supervisor, and Production Designer, within schedules and budget. Matte Painting Supervisors attend dailies and approval meetings, taking notes to ensure that their team achieves the projects' creative goals.

In recent years, Matte Painting has increasingly involved 3D projects, with 3D Matte Painting converging with the Environment Department. The Matte Painting Supervisor needs skills in 2D, 2.5D, and 3D camera projections and potentially full 3D techniques including Large Scene Assemblies. They translate 2D paintings to 3D geometry. Matte Painting Supervisors are involved from the visual development phase and problem-solve technical and creative issues throughout the project. Due to the complex and sometimes abstract nature of their work, Matte Painting Supervisors need to be able to prioritise work and effectively manage team workload and schedules to keep within budget and timeframes and are involved in building new pipelines to meet the requirements of each project.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 2D and/or 3D illustration software skills including high levels of digital literacy
- Confident with technology

Lead Digital Matte Painter

In an interview with Lead Matte Painter, Alyssa Zarate, she describes her role as "being the point person for the department. Leads are responsible for interacting with production and supervisors, assigning work to the team, and making sure the team meets our weekly quota. We problem-solve and share information related to the show with the team. We create digital environments and matte paintings as required. We also implement the best technical and creative approaches and solutions to create the required images."[15]

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 2D and/or 3D illustration software skills including high levels of digital literacy
- Confident with technology

Senior Digital Matte Painter

The Senior Matte Painter supports the Matte Painting Supervisor and Lead Matte Painter to identify, flag, and resolve technical and creative issues while working to a high level of finish. They work within the studio pipeline to integrate assets and create original assets (including shot footage, 2D and 3D elements, photography, etc.) to create photo-realistic environments with minimal supervision. Senior Matte Painters are generally expected to have over 5 years of experience as a Matte Painter.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 2D and/or 3D illustration software skills including high levels of digital literacy
- Confident with technology

[15] The Rookies website. "Career Advice - Working as a Lead Matte Painter with Alyssa Zarate" https://discover.therookies.co/2020/08/04/career-advice-working-as-a-lead-matte-painter-with-alyssa-zarate/. Accessed 15/2/2023.

Matte Painter (aka Matte Artist, Digital Matte Painter, Digital Matte Artist, Digital Artist)

Matte Painters create photorealistic backgrounds through a combination of original digital painting and combining photographic and 3D elements with digital painting. The matte paintings are then used as set extensions, backdrops, or layered 2.5D/3D projects in VFX sequences. In an interview with Matte Painter Heather Abels, she describes her role as "[one] that comes on later in the production pipeline after cameras and environments are built, and lighting has been started. Until that stage of the movie, set extension artists will help by doing environment tests, modelling, and joining the look development team with environment assets. Every show is different - Supervisors and Art Directors change, technology and environments evolve with the story, and we adapt along with all those changes to contribute to the final film."[16]

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 2D and/or 3D illustration software skills including high levels of digital literacy
- Confident with technology

[16] CG Society Website. 'The Invisible Art' - Matte Painting in Disney Features https://cgsociety.org/news/article/2470/the-invisible-art-matte-painting-in-disney-features. Accessed 13/2/2023.

2.3/ 2D VISUAL EFFECTS (VFX): PAINT AND ROTOSCOPING (ROTO) DEPARTMENT

Paint & Roto Supervisor (aka Digital Paint & Roto Supervisor, Paint Supervisor, Rotoscope Supervisor)

The Paint Supervisor manages the Paint/Roto team and outsourced vendors. They are responsible for the Quality Control (QC) process as well as the schedule and workflow. They train and mentor junior staff as this department is often an entry point for beginners in the industry. They work closely with the Compositing team to ensure the seamless integration of elements at the highest level. They attend dailies and production meetings to note corrections/revisions/feedback from the Director and other Supervisors.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

Paint & Roto Lead (aka Digital Paint & Roto Lead, Paint Lead, Rotoscope Lead)

The Paint & Roto lead is responsible for quality controlling the team's output and leads by example. Paint & Roto work includes the creation of accurate rotoscope mattes (a technique involving the "cutting out" of moving elements from the background), matte extraction (using colour keys or other extraction processes), matching motion blur on footage and digital elements, tracking plates and/or generating tracking data (a technique involving using points within a shot to stabilise or match the movement in footage), matching grain or de-graining footage, and paint frame-by-frame and/or use procedural clean-up techniques to remove rigs/tracker markers from the footage, and any other digital preparation or work on footage prior to being delivered to other VFX departments. Skills required include traditional art and design skills, troubleshooting, and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

Paint & Roto Artist (aka Digital Paint & Roto Artist, Paint Artist, Rotoscope Artist)

Paint & Roto Artists create accurate rotoscope mattes (a technique involving the "cutting out" of moving elements from the background), matching motion blur on footage and digital elements, tracking plates, and/or generating tracking data (a technique involving using points within a shot to stabilise or match the movement in footage), matching grain or de-graining footage, and paint frame-by-frame and/or use procedural clean-up techniques to remove rigs/tracker markers from the footage, and any other digital preparation or work on footage prior to being delivered to other VFX departments. Traineeships may be offered as entry-level opportunities into this department.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- Compositing and 3D software skills including high levels of digital literacy
- Technically oriented

3/ CG (COMPUTER GRAPHICS) SUPERVISORS

CG Sequence Supervisor

The Sequence Supervisor works closely with the Head of CG, the VFX Supervisor, and the Physical Production leadership team to plan and schedule the required work for CG departments and teams. They are responsible for overseeing the technical and creative aspects of work over a sequence of shots. They are responsible for the creative direction of the CG teams and establish the aesthetic and technical approach in response to the brief from the VFX Supervisor. They oversee the quality control and integrity of the work across sequences to ensure that the work being produced is in line with the articulated creative direction. This is both a creative and technical role, requiring strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Understanding of physics and movement
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

CG Supervisor

The CG Supervisor is responsible for overseeing a CG project and managing all CG departments. They tend to have CG Generalist skills to understand and troubleshoot across the entire CG pipeline. They determine the technical approach and needs for the project to achieve the director or client's vision. They work closely with the VFX Supervisor to interpret the vision of the project, working with other department supervisors to ensure that they are maximising outcomes, schedules, and technical workflow and tools. This is both a creative and technical role, requiring strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Understanding of physics and movement
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

3.1/ CG DEPARTMENT: ENVIRONMENT GENERALIST

CG Environment/Generalist Supervisor (aka Environment Supervisor, Generalist Supervisor)

The Environment Supervisor in VFX is responsible for managing the team that oversees the creation of digital environments. Reporting to the VFX Supervisor and CG Supervisor, they establish the look of environments in line with the creative direction of the VFX and CG Supervisors and oversee the quality control of the work that is produced by their teams. The Environment Supervisor establishes best-practice workflows including optimising and rendering tests, for outputting work, working closely with the Supervisors of other departments to ensure a clear delivery between departments.

In a recent interview with Ausfilm, Environment/Generalist Supervisor for ILM, Alex Popescu, describes his role: "Given the fact that our day-to-day job crosses many disciplines, the Environment/Generalist Supervisor is key to making sure that the team has a clear direction and works towards delivering the filmmakers' vision. This means a combination of artistic and technical responsibilities, plus constant collaboration with the production team to ensure we finish on time and budget."[17]

In Virtual Production, the Environment Supervisor is also known as the Virtual Art Department Asset Supervisor. The VAD Asset Supervisor supervises a team dedicated to building assets and environments for VP projects from previs, performance capture, virtual cameras, live-action simulcam camera, and/or LED Wall Projects. This requires excellent communication skills, creative and technical skills, and collaboration skills. They work closely with the Director, VFX Supervisor, Production Designer, and other various Supervisors. This is both a creative and technical role, requiring strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Environment/Generalist Lead

The Environment Lead is responsible for leading a team of Environment Artists to create photo-realistic digital environments using 3D CG technology. Environment creation work includes modelling, procedural geometry and scene assemblies, texturing, shading and look development, lighting, rendering, matte painting, and troubleshooting technical issues. They may work with Compositors to set up renders and projections in compositing software. They support the Environment Supervisor to establish the look of the work and identify the best approaches and techniques. This is both a creative and technical role, requiring management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[17] Ausfilm website. BEHIND THE SCENES: ILM'S ENVIRONMENT/GENERALIST SUPERVISOR. https://www.ausfilm.com.au/news/behind-the-scenes-meet-the-environment-generalist-supervisor-from-ilms-sydney-studio/. Accessed 16/2/2023.

Environment/Generalist Artist

Environment Artists build CG environments from real-world or concept art references, including landscapes and assets to dress environments including rocks, foliage, etc. Environmental artists have keen observation and storytelling skills as they create the details including digital set dressing to enhance cinematic storytelling. They research and collect real-world references, creating models, textures, and lighting to subtly tell the story through the environmental elements on screen (mise-en-scène).

In a recent interview with Ausfilm, Environment/Generalist Supervisor for ILM, Alex Popescu, describes the role of the Generalist Artist as "an artist whose skills spread across several different areas of the VFX pipeline. What makes it a special role within VFX companies is the focus on the result rather than the specific technique. This translates into increased ownership and increased efficiency."[18]

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[18] Ibid.

3.2/ CG DEPARTMENT: LAYOUT

Layout Supervisor

The Layout Supervisor is a virtual director of photography who interprets the storyboard and animatic into a 3D environment to block scenes. They manage a team of Layout Artists and define the pipeline for the department based on the needs of the project to deliver work according to the Director's vision. They report to the CG Supervisor and guide the team's delivery of high-end work on time and on budget. This is both a creative and technical role, requiring strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Layout Artist

The Layout Artist reports to the Layout Supervisor to interpret the storyboard and animatic into a 3D environment. "They work out the timing and the placement of the characters at key points within each shot. This is known as blocking. They aim to keep a consistent scale to the elements within the frame, always working out how best to tell the story. They do a rough version of the lighting and produce the shots."[19]

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[19] Screenskills website. Layout Artist. https://www.screenskills.com/job-profiles/browse/animation/production/layout-artist-animation/. Accessed 16/2/2023.

3.3/ CG DEPARTMENT: LIGHTING

Lighting Supervisor (aka Lighting TD Supervisor)

The Lighting Supervisor is responsible for leading a team of Lighting Technical Directors (TD) and Lighting Leads to create lighting in accordance with the creative direction. To achieve these results, the Lighting Supervisor engages in research, develops processes and pipelines, scripts, outputs, and tools to achieve the best process. Lighting Supervisors are "responsible for lighting dailies and quality control and ensuring aesthetic consistency. Brief lighting artists and provide constructive artistic feedback to ensure this consistency."[20] This is a highly technical and creative role that involves troubleshooting, communication, and leadership skills, and is responsible for clear lines of communication between different departments.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and lighting
- Excellent listener and observer
- Leadership and creativity
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Lighting Lead

Lighting leads oversee the Lighting teams to ensure the work being produced is to the highest standard and delivered on schedule. They create lighting and shading techniques and lead the team to deliver final renders for the Compositing Department and collaborate closely with other department leads to resolve creative and technical issues and to determine CG approaches. They run dailies sessions with Supervisors and their teams, taking notes and providing feedback to their teams.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and lighting
- Excellent listener and observer
- Leadership and creativity
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Lighting Artist

The Lighting Artist is responsible for executing lighting based on the established look of the project. They work closely with the Lighting Lead and collaborate with the CG Supervisor and Texture artists to achieve production quality results to realise the vision of the Directors, Production Designer, VFX Supervisor, and Lighting Supervisor, within the set schedules. They ensure that "all shots are complete, lighting rigs are optimised and organised so that they are ready for use in production. The lighting artist also creates any necessary documentation for the overseas lighting launch for the production."[21]

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and lighting
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[20] Careers in Screen website. Lighting Supervisor. https://www.careersinscreen.ie/role/lighting-supervisor/. Accessed 16/2/2023.
[21] Careers in Screen. Lighting Artist. https://www.careersinscreen.ie/role/lighting-artist-2/. Accessed 16/2/2023.

3.4/ CG DEPARTMENT: LOOK DEVELOPMENT

Look Development Supervisor

The Look Development Supervisor manages the team that creates the final looks for CG characters and environments. They work closely with "the Lighting and Surfacing Supervisors to design and write custom shaders and shading networks to create desired looks for feature animation." "Look Development Artists (Look Devs) define the look of computer-generated creatures or objects to ensure all the art in the production is consistent and of high quality. "Some VFX companies or studios may only have a Lighting TD role, and not a Look Dev one. In this case, the responsibilities of the Look Dev would be covered by a Lighting Artist."[22]

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and able to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Look Development Lead (aka Surfacing Lead)

Look Development Leads are creative problem solvers. Their job is to develop the look, and the methodology for producing the desired look, for elements being created in a CG production. On his website, CG Artist Ian Comley describes his role as Look Development Lead by giving an example of work he did on a particular project: "My role as Look Development Lead [on *Gravity*] was initially to explore how to render this photoreal project […] then pushing shaders, tools, and images to the level we needed. With techniques establishing, I focused primarily on the development of the character assets, including CG space suits, and digital doubles, including facial capture."[23] This is both a creative and technical role, with excellent problem-solving and communication skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Look Development Artist (aka Look Dev Artist, Surfacing Artist, Surfacer)

Look Dev Artists are involved from pre-production to post production. They "oversee the overall look of the initial artwork and concentrate on developing the aesthetics of [a production] in pre-production. In post production they create the final finishes on the [project] textures [provided by the Texture Artist]."[24] The Look Dev artist will then "add shading, special effects, contours, etc"[25] to integrate the texture naturally by manipulating the surface of the CG element to create a photo-realistic scene. "They will also develop the differing conditions of a texture, for example how it will react to elements such as water, light, wind, fire, etc."[26] Look Dev artists need to have strong aesthetic sensibilities and understand cinematic storytelling techniques.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[22] Screenskills website. What does a look development artist do? https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/computer-generated/look-development-artist/. Accessed 1/2/2023.
[23] Ian Comley website. https://www.iancomley.com/vfx.php. Accessed 16/2/2023.
[24] CG Spectrum. Look Dev Artist. https://www.cgspectrum.com/career-pathways/look-dev-artist. Accessed 16/2/2023.
[25] Ibid
[26] Ibid

3.5/ CG DEPARTMENT: MODELLING

Modelling Supervisor

The Modelling Supervisor reports to the CG Supervisor and Production Manager and the Modelling team. They establish workflows and have oversight of quality control of design and execution. They collaborate with other departments to ensure that models are developed in accordance with the needs of the production, developed collaboratively across departments, and shared along the pipeline in an efficient manner (e.g., rigging, animating, surfacing, etc). They manage the work allocation and mentor teams to develop the capability to ensure the highest quality of output from the team to optimise asset creation. The Modelling Supervisor works closely with the Pipeline Supervisor to develop tools to support the specific modelling needs of the project. This is both a creative and technical role, with excellent problem-solving and communication skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine sculptural detail
- Leadership and ability to give and receive feedback
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Modelling Lead

The Lead Modeller oversees the design and creation of efficient models as per the requirements for the project within the scheduled deadlines. They work closely with the CG Supervisor to establish the modelling and lead the modelling team. They need to have effective management skills to ensure high levels of teamwork resulting in high-quality and efficient model creation within time and budget. They work across departments with the Rigging, Shading, and Animation teams to ensure that technical issues are resolved and to optimise the model assets. This is both a creative and technical role, with excellent problem-solving and communication skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine sculptural detail
- Leadership and ability to give and receive feedback
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Modeller

Modellers translate concept art or photo references to 3D models in CG production.[27] Modellers often start out modelling props, moving to hero and/or character models as they develop their skills. “Modellers create digital versions of the characters and props, which can then be ‘rigged’ to be animated. […] Modellers provide initial feedback to designers on whether a design is going to be possible to model to then be rigged and animate or not. Therefore, good communication with designers, riggers, animators, and the director is very important. […] Often in smaller to mid-sized studios, the Modeller is responsible for texturing and colouring the model themselves.”[28]

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine sculptural detail
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy

[27] For a description of Model Maker roles in Stop Motion, see the entry under “Stop Motion.”
[28] Screenskills website. Modeller/Model Maker. https://www.screenskills.com/job-profiles/browse/animation/pre-production/modeller-model-maker/. Accessed 17/2/2023.

3.6/ CG DEPARTMENT: PREVISUALISATION

Previsualisation Supervisor (aka Visual Effects (VFX) Previs Supervisor, Previs Supervisor)

Previsualisation (Previs) Supervisors lead the Previs team to create a dynamic cinematic vision for a project. They need strong skills in cinematic storytelling and knowledge of film production processes as they often visualise shots requiring both physical production and VFX components. They work closely with the Director and VFX Supervisor to translate their vision into a 3D environment. They provide creative and technical solutions and devise methods to realise the creative vision of the Director. This is both a creative and technical role that requires strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy

Previsualisation Lead (aka VFX Previsualisation Lead, Previs Lead, VP Visualisation Lead)

The Previsualisation (Previs) Leads "interpret 2D storyboards and plan and implement the cinematography of the 3D production from those storyboards."[29] They lead the Previs team to create a dynamic cinematic vision for a project. They need strong skills in cinematic storytelling and knowledge of film production processes as they often visualise shots requiring both physical production and VFX components. They work closely with the Director and VFX Supervisor to translate their vision into a 3D environment. They provide creative and technical solutions and devise methods to realise the creative vision of the director. This is both a creative and technical role.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and visual storytelling
- Leadership and creativity
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy

Previsualisation Artist (aka VFX Previsualisation Artist, Previs Artist, VP Visualisation Artist)

The Previsualisation (Previs) Artist works closely with the Director and VFX Supervisor "to create draft versions of key scenes and sequences to test the action and act as a basis from which to animate, act out, film, or build. […] to plan out the scenes at a conceptual stage, like visual rehearsals of a scene."[30] Previs artists create 3D animatics to find creative and technical solutions and methods by previsualising shots to assist in decision-making. "The previs process is used to plan shots, work out the scale and timing, and show roughly where the characters are going to move. It's used to map out how the visual effects (VFX) will fit into an otherwise live-action scene."[31] This is both a creative and technical role.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- 3D animation software skills including high levels of digital literacy

[29] Careers in Screen website. https://www.careersinscreen.ie/role/previs-and-layout-artist/. Accessed 24/3/3023.
[30] CG Spectrum website. Previs Artist. https://www.cgspectrum.com/career-pathways/pre-vis-animator. Accessed 16/2/2023.
[31] ScreenSkills website. What does a previs artist do? https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/pre-production/previsualisation-previs-artist/. Accessed 22/12/2022.

3.7/ CG DEPARTMENT: SHADING

Shading Supervisor

The Shading Supervisor works closely with the Lighting Supervisor, Effects Supervisor, and CG Supervisor to ensure that shading tools are developed and delivered at a high quality within set timeframes. They develop rendering tools and lead a team of Shading Artists to manage the productivity and quality of work. This is a highly technical role that requires strong visual/aesthetic understanding.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Technically oriented

Shading Lead

The Shading Lead works with department Supervisors, and TDs in Look Development, Texturing, and Lighting Departments. They develop new shaders and maintain/improve existing materials. They ensure that the style and mood of the scenes are expressed by setting up materials to react to digital lighting setups. The Shading Lead is a highly technical role that requires strong aesthetic understanding and attention to detail. The Shading Lead liaises with the R&D team to ensure that internal best-practice is being followed in the shader development process.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Ability to receive feedback
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Technically oriented

Shading Artist

The Shading Artist works with department Supervisors, Leads, Artists, and TDs in Look Development, Texturing, and Lighting Departments. They develop new shaders and maintain/improve existing materials. They ensure that the style and mood of the scenes are expressed by setting up materials to react to digital lighting setups. The Shading Artist is a highly technical role that requires strong aesthetic understanding and attention to detail. The Shading Artist liaises with the R&D team to ensure that internal best-practice is being followed in the shader development process.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Ability to receive feedback
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Technically oriented

3.8/ CG DEPARTMENT: TEXTURING/SURFACING

Texture Supervisor (Texture Paint Supervisor)

The Texture Supervisor has oversight over "delivering textures that reach the artistic and technical requirements to deliver the visual style of the production. The Texturing Supervisor will work closely with the Lighting Supervisor, the CG Supervisor, and the VFX Supervisor, to ensure that all textures are pipeline friendly."[32] They ensure that the textures meet the director/producer's creative vision and producing textures to the highest quality. "This requires production experience of the texturing and lighting pipeline and an in-depth knowledge of texture painting and UVing […]. In collaboration with the CG Supervisor and Pipeline departments they will help define the texturing pipeline, including inputs, outputs, naming conventions, scripts, and tools."[33] This is both a creative and technical role, which requires strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation and lighting software skills including high levels of digital literacy
- Technically oriented

Lead Texture Artist

The lead Texture Artist oversees the creative and technical quality of work produced by their team. They work closely with the VFX Supervisor and Texture Supervisor to execute the desired look of CG models with advanced knowledge of tools and creative approaches to produce the desired look. They are often responsible for setting up asset pipelines according to the Texture Supervisor's specifications, acting as their 2IC, and attends dailies to provide notes and feedback to the team. This is both a creative and technical role, which requires strong management skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation and lighting software skills including high levels of digital literacy
- Technically oriented

Senior Texture Artist

The Senior Texture Artist is an accomplished artist who can bring 3D models to life by creating high-end textures in accordance with the creative vision of the Director/Producer. They work closely with the Lighting, Shading, and Assets teams, to produce photo-realistic textures mapped to the models. They develop pipelines and manage textures for different production use. They generally have 5 years of experience and bring strong artistic and technical skills to their craft. This is both a creative and technical role.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation and lighting software skills including high levels of digital literacy
- Technically oriented

[32] Careers in Screen website. Texture Supervisor. https://www.careersinscreen.ie/role/texturing-supervisor/. Accessed 20/2/2023.
[33] Ibid.

Texture Artist	**3D, VFX**

Texture Artists are responsible for the creation of realistic textures for 3D models in CG production to bring models to life. They require high levels of artistic and technical skills to realistically replicate the material properties of objects for 3D models that are created by the Modelling department. "Texture artists sometimes create textures from scratch, so they have a good understanding of different kinds of real-world materials."[34] They need to be keen observers and understand the material qualities of the surfaces of objects including reflection, translucence, etc. This is both a creative and technical role.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Ability to receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation and lighting software skills including high levels of digital literacy
- Technically oriented

Junior Texture Artist	**3D, VFX**

This is an entry-level role in the Texturing Department. Junior Texture Artists report to the Lead Texture Artist to execute realistic texturing of CG models as directed by the Lead Texture Artist and/or the Texture Supervisor. They need a strong knowledge of 3D animation software and knowledge of the 3D pipeline. This is both a creative and technical role.

Personal attributes that are needed to succeed in this role include:

- Passion for art, colour science, and attention to fine image detail
- Ability to receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation and lighting software skills including high levels of digital literacy
- Technically oriented

[34] Screenskills website. Texture Artist. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/computer-generated/texture-artist/. Accessed 20/2/2023.

3.9/ CG DEPARTMENT: TRACKING

Matchmove Supervisor

The Matchmove Supervisor leads the Matchmove department and has oversight for the quality and accuracy of matchmove assets. They report to the CG Supervisor and other Supervisors to "ensure that matchmove assets are working consistently throughout the pipeline."[35] The Matchmove Supervisor can also work as the Layout Supervisor and therefore need a high level of knowledge of cameras, lenses, and on-set data, as well as a holistic understanding of the script and creative vision of the project. This is a technical role that requires strong management and visual storytelling skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Matchmove Lead (aka Tracking Lead)

The Matchmove Lead reports to the CG Supervisor and is responsible for managing a team of artists working on matchmoving (or tracking) tasks. They are responsible for the quality control of matchmove work and have advanced knowledge of cameras, lenses, on-set data, etc. This role often requires 5+ years of experience. This is a technical role that requires strong management and visual storytelling skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Matchmove Artist

The Matchmove Artist's role is to "match computer-generated (CG) scenes with shots from live-action footage so the two can be convincingly combined. They recreate live-action backgrounds (plates) on a computer in a way that mirrors the camera on the set in every way, including lens distortion. They do this by tracking the camera movements to make sure the real and virtual scenes appear from the same perspective. Sometimes matchmove artists go to the film set to take measurements and put up tracking markers."[36] This is a role that requires precision and the ability to work within a team to ensure that matchmove assets are made available to other departments in the VFX pipeline in an efficient and accurate manner. Junior Matchmove Artists roles are entry-level roles in the industry. This is a technical role that requires visual storytelling skills.

Personal attributes that are needed to succeed in this role include:

- Passion for art, photography, and cinematic storytelling
- Leadership and ability to give and receive feedback
- Strong communicator, problem-solver and collaborator
- 3D animation software skills including high levels of digital literacy
- Technically oriented

[35] Careers in Film. Matchmove Supervisor. https://www.careersinscreen.ie/role/matchmove-supervisor/. Accessed 20/2/2023.
[36] Screenskills website. Matchmove Artist. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/computer-generated/matchmove-artist/. Accessed 20/2/2023.

4.1/ CG TECHNICAL DEPARTMENT: TECHNICAL DIRECTING

Technical Director (aka TD)	**3D, VFX, VP**

Technical Directors (TDs) "convert creative techniques into computer graphics processes […] In film or game productions, TDs create the technical framework, for example through specific software developments or the adaptation of software applications, through which artistic ideas can be implemented."[37] Each department has department-specific TDs with specialist skills. See the relevant department for information about Department-specific TDs including:

- Animation TD
- Creature TD
- Crowd TD
- Effects TD
- Lighting TD
- Pipeline TD
- Rigging TD

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and the ability to give and receive feedback
- Ability to learn and develop technical skills to a high level
- Keen observational skills
- Curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Attention to detail and technically oriented
- Coding, 3D animation software skills including high levels of digital literacy
- Technically oriented
- Strong communicator, problem-solver and collaborator

[37] Animations Institut website. https://animationsinstitut.de/en/blog/people/detail/what-does-a-technical-director-do. Accessed 22/2/2023.

4.2/ CG TECHNICAL DEPARTMENT: CREATURE

CG Creature Supervisor (aka Creature Supervisor)

The Creature Supervisor has oversight of the rigging and technical animation pipeline on a project. A Technical Director "makes this easier and makes things possible… guiding a project in terms of technical and organisational…[through] research and development."[38] They manage teams of Riggers and Technical Animators and are expected to have knowledge across creature technology development, rigging, anatomy, creature simulation (e.g., hair/fur, muscle, etc.). They work closely with Modellers, Animators, Groomers, CG Supervisors, and the production team. This is a technical and creative role.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

CG Creature Lead (aka Creature Lead, Lead Creature TD)

The Creature Lead has oversight over a team of Riggers, Cloth, Hair, and Deformation Artists. They work closely with the Animation team to ensure a smooth pipeline and execution of character rigs, dynamics, and effects. This is a technical and creative role.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

CG Creature Artist (aka Creature Artist)

Creature Artists are responsible for creating convincing creatures based on the Director's vision. They need a strong understanding of human and animal anatomy and movement. They work closely with Animators and Riggers to develop the look of CG creatures that they are responsible for. Creature Artists are often freelancers who develop skills across a range of projects from commercials to feature films.[39] This is a technical and creative role.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

[38] Alexander Richter Youtube channel. What is a Technical Director? https://www.youtube.com/watch?v=vpGNlv6j00Y. Accessed 22/2/2023.
[39] Alexander Richter Youtube channel. Interview with Gael Kerchenbaum, Creature Artist in Visual Effects and AI. https://www.youtube.com/watch?v=ixBkGKyhqFs. Accessed 22/2/2023.

4.3/ CG TECHNICAL DEPARTMENT: CROWD

CG Crowd Technical Director (aka Crowd TD)

Crowd Technical Directors are responsible for the technical oversight of the motion and animation of CG crowds of characters for high-end productions. They create crowd simulations of characters/creatures as per briefings from the VFX Supervisor and CG Supervisor, by liaising with other departments including Modelling, Rigging, Animation, Motion Capture, and Lighting departments to ensure that the scenes are consistent with the production in accordance with the Director's vision.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

CG Crowd Supervisor (aka Crowd Supervisor)

The Crowd Supervisor manages the team of artists creating Crowd Animation/Simulation. They work collaboratively with other department supervisors on pipeline and production. They provide their team with aesthetic and technical guidance to ensure the highest quality of work that is delivered on time and on budget. They build workflows and create behaviours of characters and simulations to achieve believability in accordance with the Director's creative vision. They oversee the development of new technology that may be required to meet the specific creative and technical needs of the project.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

CG Crowd Lead (aka Crowd Lead, Crowd Artist)

The Crowd Artist creates the movement of crowds of characters/creatures. The work involves creating simulations for previs and shoot planning, creating crowd behaviours, and simulations aligned to the project's creative direction. They work with the VFX Supervisor and CG Supervisor and Producer(s) to implement efficient and effective ways to integrate crowd pipeline tools and techniques, as well as problem-solving issues as they arise. They attend meetings to discuss shots, sequences, and production.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Able to receive feedback
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

4.4/ CG TECHNICAL DEPARTMENT: EFFECTS (FX) & SIMULATION

Effects Technical Director (FX TD)

Effects Technical Directors (FX TDs) are responsible for overseeing the creation of realistic digital effects based on real-world physics. Examples of effects include particle and fluid effects such as fire, explosions, smoke, and water. Although crowd simulation involves FX and Simulation, it can have its own dedicated department on large projects with specialist Crowd Simulation Artists and Supervisors. They oversee the completion of the FX sequences, from writing code for customised tools that are required to meet the aesthetic needs of the production, to overseeing the renders. They work closely with the VFX Supervisor, Director, Cinematographer, and Gaffer on the best filming conditions for the FX sequences. Attention to detail and a basic understanding of science/physics are needed as this role is responsible for creating effects that are believable and consistent with the creative direction of the project by blending seamlessly with other assets. This is both a technical and creative role, requiring strong management and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Keen observational skills
- Curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

Effects Artist (aka FX Artist; Effects Animation Artist)

The FX Artist is "responsible for adding natural or supernatural characters or things to animated films. They work with VFX supervisors to determine the most effective approach to solving effects issues and develop the finished, final product." [40] FX Artists work in the Technical FX Departments in CG animation and VFX (in 2D animation, they can be referred to as Effects Animation Artists and render effects animation by hand). FX Artists use concept art and design from art departments as references for their work. They work with VFX supervisors, Technical Directors, and Art Directors to ensure that their effects are aligned with the creative vision of the project and integrate seamlessly with other assets. According to the Animation Career Review site (2019), FX Artists have "the second highest concentration of employment in the industry."[41] This is both a technical and creative role, requiring strong problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills
- Curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

[40] Animation Career Review website. Effects Animator - Career Profile https://www.animationcareerreview.com/articles/effects-animator-career-profile. Accessed 1/2/2023.
[41] Ibid.

Simulation Supervisor

The Simulation Supervisor oversees a team of Simulation Artists producing hair/fur/cloth simulations to ensure high-quality work is delivered on time and on budget. They collaborate with department heads (including Rigging, Modelling, Character Animation, Look Development, and Art Department) to create simulated effects (such as hair, fur, cloth, etc) that meet artistic and technical criteria, as well as create character guides for simulated elements. They work closely with the FX Supervisor and team to package up simulation components included as part of an environment. This is both a technical and creative role, requiring strong management and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

Simulation TD

Simulation Technical Directors (Simulation TDs) have oversight of the creation of effects to realistically move hair, fur, clothing, etc. "Programmers start with a physics-based simulator, but then they fine tune it to balance believability with the artistic needs as well as the time it takes to compute the simulation."[42] Simulation Leads and/or TDs supervise the design and implementation of the simulation pipeline and draws upon software engineering skills. This is both a technical and creative role, requiring strong management and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

Simulation Lead

Simulation Leads have oversight of the team(s) of Simulation Artists to create realistic effects that simulate hair, fur, clothing, etc. in a realistic way. They report to the Simulation TD and work closely with Supervisors from different departments to ensure that the requirements for the simulation look, style and movement to create mock-ups and approvals. They mentor and lead a team of Simulation Artists, and with the Simulation TD, they supervise the design and implementation of the simulation pipeline and draw upon software engineering skills. This is both a technical and creative role, requiring strong management and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

[42] The Science Behind Pixar website. Simulation. https://sciencebehindpixar.org/pipeline/simulation. Accessed 23/2/2023.

Simulation Artist

Simulation Artist is "responsible for creating secondary animation such as hair and cloth simulation. [They are] responsible for the setup of simulation assets within existing pipeline for hair and cloth. Also, the setup of prototype or development assets for testing of new procedures and workflows."[43] They report to the Simulation Supervisor and/or the Director and attend dailies to take notes and feedback to apply to their shots to establish the character look and movement. This is both a technical and creative role, requiring strong communication and problem-solving skills.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

[43] Siggraph 2022. Presentation: 3D Simulation Artist · Mainframe Entertainment Inc. https://s2022.siggraph.org/presentation/?id=job_174&sess=sess326. Accessed 23/2/2023.

4.5/ CG TECHNICAL DEPARTMENT: PIPELINE ENGINEERING

Pipeline Technical Director (aka Pipeline TD)

Pipeline Technical Directors (Pipeline TDs) have oversight over the development and maintenance of software tools. They provide support to artists and supervisors to ensure the smooth running of software and the pipeline, troubleshooting issues efficiently and promptly. They report to the R&D Supervisor and are given direction by the CG Supervisor. Pipeline TDs "communicate with VFX artists across the team to understand their needs. They then put things in place to ensure the project runs smoothly and the artists' needs are met. […] Their job involves writing or modifying code to solve problems. […] Pipeline TDs will work closely with R&D teams, who design and test any new software."[44] This is a primarily technical role that requires an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented

Pipeline Supervisor

Pipeline Supervisors report to the Chief Technology Officer (or equivalent). They are responsible for leading a team of Pipeline Engineers to develop, deploy and support the project's technical pipeline. They work closely with the Technology Department, CG Supervisor(s), TDs, and R&D to ensure that the pipeline is designed and deployed efficiently to maximise outputs and to minimise risk and waste. They act as the point-person for resolving issues and improving workflow, while enhancing the creative process. This is a primarily technical role that requires an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented

Pipeline Engineer (aka 3D/VFX Pipeline Engineer, Motion Capture Pipeline Engineer)

The Pipeline Engineer is responsible for the design and development of pipeline software used by VFX artists across all departments. They collaborate on a frequent basis with TD and technical leads, applying industry best practices and established R&D coding standards. They craft and improve workflows, build tools and interfaces, enable the efficient flow of assets including scene assembly and scene manipulation, and provide technical support to artists. This is a primarily technical role that requires an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Strong communicator, collaborator, and problem-solver
- Curious and innovative
- Computer science and network engineering skills
- An adaptable, systems-thinking approach
- Attention to detail and technically oriented

[44] Screenskills website. Pipeline TD. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/technical/pipeline-technical-director-td/. Accessed 22/2/2023.

Systems Manager (aka 3D/VFX Systems Manager, Motion Capture Systems Manager)

The Systems Manager has oversight of the computer system infrastructure for the VFX project/organisation and oversees the team of Pipeline Technicians, Programmers, and Database Administrators constituting the IT team. Their responsibilities include technical support and technical operations, managing and forecasting data storage needs, and processing needs. "This role is critical as it directly affects the ability of the entire studio to deliver work on time. The system manager's input is key in providing adequate IT infrastructure to allow for quick turnaround changes from the client."[45] This is a primarily technical role that requires strong business and client-management skills.

Personal attributes that are needed to succeed in this role include:

- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented
- Business oriented

Systems Engineer (aka 3D/VFX Systems Engineer, Motion Capture Systems Engineer)

The Systems Engineer performs hands-on work to "ensure the smooth operation of all IT systems related to production and also has input in developing the production systems for future work."[46] Their work includes the installation, support, and maintenance of IT servers and file systems. They develop automated scripts for "triggering standard event-based system activities [and are] heavily involved in the efficient management of systems projects."[47] This is a primarily technical role that requires strong business and client-management skills.

Personal attributes that are needed to succeed in this role include:

- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented
- Business oriented

Systems Administrator (aka 3D/VFX Systems Coordinator, Motion Capture Systems Coordinator)

System Administrators are responsible for providing day-to-day support to the VFX team as well as working with the Systems Manager to improve and maintain the IT infrastructure. They monitor systems to report on and diagnose issues as they arise. They are responsible for ensuring the smooth and efficient running of systems and responding in a timely manner to technical issues. As they work with a range of digital artists, they need to be able to articulate complex technical information to non-technical people. This is a primarily technical role that requires strong business and client-management skills.

Personal attributes that are needed to succeed in this role include:

- Strong communicator
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented
- Patience

[45] Careers in Screen. Systems Manager. https://www.careersinscreen.ie/role/systems-manager/. 22/2/2023.
[46] Careers in Screen. Systems Engineer. https://www.careersinscreen.ie/role/system-engineer/. 23/2/2023.
[47] Ibid

Assistant Technical Director

The Assistant Technical Director (Assistant TD) "assists pipeline TDs and other TDs to gather information on the needs of each department. They design solutions for problems that arise and use coding skills to create small-scale tools needed by the VFX artists. They deal with minor bug reports so that pipeline TDs can deal with bigger problems, such as rendering errors."[48] Assistant TDs also work closely with R&D teams. This is a primarily technical role that requires strong business and client-management skills.

Personal attributes that are needed to succeed in this role include:

- Strong communicator
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented
- Patience

Technical Assistant (Pipeline Technical Assistant, Junior Pipeline TD)

Technical Assistants work with VFX artists, Pipeline TDs, and the software R&D team to support the development of tools and technologies used by the team to deliver the creative vision of the Director and Producer. They ensure that issues are resolved before they need to be escalated to maximise efficiency along the pipeline. This is a primarily technical role that requires strong business and client-management skills.

Personal attributes that are needed to succeed in this role include:

- Strong communicator
- Ability to learn and develop technical skills to a high level
- An adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Computer science and network engineering skills
- Attention to detail and technically oriented
- Patience

[48] Screenskills website. Assistant TD. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/technical/assistant-technical-director-td/. Accessed 22/2/2023.

4.6/ CG TECHNICAL DEPARTMENT: RENDERING

Render Technical Director (Render TD)

The Render TD supports and optimises the rendering pipeline and process. Their responsibilities include troubleshooting issues, and working with a team to plan and optimise render workflows. They work closely with Artists, Head of Departments, and Developers to identify, flag and resolve issues. The find solutions to rendering complex shots and sequences in an efficient and optimised manner in line with the Director's creative vision. They support and mentor Render Technical Assistants.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- Leadership and communication skills
- A systems thinker who understands the needs of creative technical artists
- An ability to ask questions and pre-empt issues
- Adaptable, curious, and innovative
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Remains calm in stressful situations

Render Coordinator (aka Render Manager)

The Render Manager or Coordinator is responsible for the preparation and support, forecasting, optimising, analysing and implementing rendering solutions and strategies. They work closely with the CG Supervisor and Pipeline Supervisor to assess rendering requirements for production. They document and collaborate to develop tools to ensure efficient 3D scene rendering.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- Leadership and communication skills
- Adaptable, curious, and innovative
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Remains calm in stressful situations

Technical Associate (aka Render Wrangler)

The Technical Associate role works within the IT team to perform render-related duties. They monitor and control the rendering process and manage the render farm, troubleshooting issues as they arise. They may also work on I/O data transfer operations.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- An ability to ask questions and pre-empt issues
- Adaptable, curious, and innovative
- Strong communicator, problem-solver and collaborator
- Coding, 3D animation software skills including high levels of digital literacy
- Remains calm in stressful situations

4.7/ TECHNICAL DEPARTMENT: RESEARCH & DEVELOPMENT (R&D)

Research & Development Supervisor (R&D Supervisor)

The R&D Supervisor manages the R&D team, ensuring that the team follows established R&D standards and procedures in developing new techniques and tools. They are responsible for writing procedure documents and reporting on R&D activities and outcomes as part of their work. To be an R&D Supervisor typically requires 3 years of experience in the related area as an individual contributor.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- Leadership and communication skills
- Adaptable, curious, and innovative
- Coding, 3D animation software skills including high levels of digital literacy
- Strong communicator, problem-solver and collaborator

R&D Technical Director (R&D TD)

The R&D TD leads the creation and maintenance of workflow tools for the animation and/or VFX in-house software. They work closely with creative teams, CG Supervisors, and technical artists to meet the needs of the business and users. R&D TDs can specialise in specific subject areas.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- Leadership and communication skills
- Adaptable, curious, and innovative
- Coding, 3D animation software skills including high levels of digital literacy
- Strong communicator, problem-solver and collaborator

R&D Engineer

R&D Engineers collaboratively work with Department Supervisors and Lead Technical Artists to find technical solutions required to deliver high-end animation and VFX. Their work involves applied R&D, maintenance of software, and providing end-user support. They may specialise in specific areas such as shaders, rigs, lighting, etc.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- Strong collaboration and communication skills
- Adaptable, curious, and innovative
- Coding, 3D animation software skills including high levels of digital literacy
- Excellent problem-solver

R&D Artist

R&D Artists combine creative and technical skills to drive solutions and enhance production to optimise software/system performance and outcomes. They work with Lead Artists and within established aesthetic styles and production schedules to identify and plan areas of research, conduct testing of in-house tools, and document all research work and training material in accordance with relevant procedures.

Personal attributes that are needed to succeed in this role include:

- High levels of competency in computer science or engineering
- A systems thinker who understands the needs of creative technical artists
- Strong collaboration and communication skills
- Adaptable, curious, and innovative
- Coding, 3D animation software skills including high levels of digital literacy
- Excellent problem-solver

4.8/ CG TECHNICAL DEPARTMENT: RIGGING

Rigging Supervisor

The Rigging Supervisor manages the Rigging Department and is "responsible for the artistic and technical quality of all Rigs created for production. […] Animation needs can change throughout production so the Rigging Supervisors must define standards to ensure Rigs are customisable, reusable, scaleable, and pipeline friendly."[49] The Rigging Supervisor oversees the creation and maintenance of efficient rigs for characters, vehicles, props and other animatable objects. They work closely with the CG Supervisor and Pipeline Supervisor to "help define the Rigging pipeline, including inputs, outputs, naming conventions, scripts, and tools. [They] dissect animation briefs, and discern animation needs vs. animation wants."[50] They are also responsible for resolving issues related to complex rigs that are required across animation, motion capture, and FX/Simulation Departments. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Rigging Technical Director

The Rigging Technical Director (TD) oversees a team of professionals responsible for "creating, maintaining and expanding rigs for a variety of props, vehicles, characters and other CG objects that need to be animated."[51] They work collaboratively with the Animation and Modelling teams to "create intuitive and responsive rigs that meet animator's needs." They ensure that rigs adhere to the technical standards of the Rigging Department and work efficiently across the pipeline. They interpret briefs from the Rigging Supervisor, Animation Supervisor, and Director to plan and deliver, maintain, and extend rigs. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

[49] Careers in Screen. Rigging Supervisor. https://www.careersinscreen.ie/role/rigging-supervisor-2/. Accessed 23/2/2023.
[50] Ibid.
[51] Careers in Screen. Rigging Technical Director. https://www.careersinscreen.ie/role/rigging-technical-director/. Accessed 23/2/2023.

Rigging Lead

The Rigging Lead has oversight of the day-to-day operations of the Rigging Artists. They ensure the quality, versatility, and durability of rigging systems with their associated animation interfaces. The Rigging Lead manages and tracks CG character, creature, and environment rigging requirements across all projects. They work closely with Supervisors across other departments to ensure an optimal ongoing rigging workflow. This is primarily a technical role that requires a strong aesthetic and understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Rigging Artist

Rigging Arts are responsible for "creating, maintaining and expanding Rigs for a variety of props, vehicles, characters, and other CG objects that need to be animated".[52] This role works closely with the animation team to ensure that rigs are intuitive and responsive, meeting the Animator's needs by interpreting the Animation Director's notes and feedback from animators. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Junior Rigger

The Junior Rigger supports the animation production pipeline by working closely with the senior Rigger and animation team to support character setup (skinning, weights, etc), managing prop assets, retargeting motion capture animation to custom rigs, and other tasks assigned by the Senior Rigger. As Juniors, they tend to work within an existing pipeline. They attend to issues in character and prop rigs and anticipate issues before problems are escalated. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

[52] Careers in Screen. Rigging Artist. https://www.careersinscreen.ie/role/rigging-artist/. Accessed 23.2.2023.

Character Rigging Supervisor

The Character Rigging Supervisor works closely with the Character Development Supervisor and Production Management to ensure that character rigs are designed and delivered to schedule. They collaborate with other department heads to design animator-friendly rigs, streamline workflows, and define the character pipeline. They work closely with the Character Development Supervisor to oversee cloth and hair setup for integration into rigs. They work with the R&D team to design, develop and implement new tools. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Character Setup Supervisor

The Character Supervisor works closely with the Art Director and CG Supervisor to strategise and deliver technical solutions to the visual and operational requirements for character movement. They commence from pre-production through to asset production. They have complete oversight of characters across all departments from modelling, texturing, shading, rigging, etc. They supervise teams of Character Artists across different departments and oversee the creation of characters and prop rigs for animation and deformation. This is a creative and technical role that requires strong people management skills and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Character Setup Lead (Character Development Lead)

The Character Development Lead works within the Animation Department and liaises with the Rigging and Modelling Departments to facilitate the work to make the rigs and models usable for all CG characters. They undertake “aesthetic checks” for character models and work with the Animation Supervisor, Character Specialists, and Rigging team to ensure functionality, testing workflow, and troubleshooting. They also provide documentation on rigging design, workflow, and approach. This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Character Rigging Artist

The Character Rigging Artist is responsible for creating "the internal structural frameworks and controls of a 3D model, defining how an animator will be able to manipulate it. Their goal is to build a skeleton that will operate a character and bring it to life. Character and Model Riggers help to create believable movement that abides by the laws of anatomy, physics, and real-world experiences in a virtual environment. Character Riggers can work in film, TV, and video games."[53] This is primarily a technical role that requires a strong aesthetic and an understanding of creative processes and drivers.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Keen observational skills, curious and innovative
- Understanding of physics and movement
- An adaptable, systems-thinking approach
- Leadership with strong communication, problem-solving and collaboration skills
- Coding, 3D animation software skills including high levels of digital literacy
- Attention to detail and technically oriented
- Understanding of anatomy and physics

[53] CG Spectrum website. Character Rigger. https://www.cgspectrum.com/career-pathways/character-rigger. Accessed 24/2/2023.

4.9/ CG TECHNICAL DEPARTMENT: STEREOSCOPIC 3D

3D Stereoscopic Supervisor

A Stereoscopic Supervisor is responsible for providing aesthetic and technical leadership to the stereoscopic team. They have oversight over the quality and experience of stereoscopic imagery and collaborate with other departments to ensure that the high-end work is delivered on time and on budget. They identify the style of stereography in collaboration with the producer and creative leads. They develop and implement the 3D stereography pipeline, troubleshooting issues and provide support where needed.

Personal attributes that are needed to succeed in this role include:

- A passion for cinematic storytelling and stereography
- Leadership and communication skills
- Strong collaboration and communication skills
- Adaptable, curious and innovative
- Excellent problem-solver
- Technically oriented
- High level of tolerance for viewing stereographic imagery over a long period of time

3D Stereoscopic TD

A Stereoscopic Technical Director has oversight of the design and implementation of the technical and aesthetic aspects of stereography on a production, including (but not limited to) stereoscopic camera setup, camera staging, and stereoscopic compositing. They work closely with the 3D Stereoscopic Supervisor and producer to design technical approaches to projects, sequences, or shots with a team of stereographic artists.

Personal attributes that are needed to succeed in this role include:

- A passion for cinematic storytelling and stereography
- Leadership and communication skills
- Strong collaboration and communication skills
- Adaptable, curious and innovative
- Excellent problem-solver
- Technically oriented
- High level of tolerance for viewing stereographic imagery over a long period of time

3D Stereoscopic Artist

3D Stereoscopic Artists (Stereographers) work closely with the 3D Stereoscopic Supervisor, Director of Photography, Director, and Producer to create immersive and comfortable 3D Stereoscopic images to enhance cinematic storytelling. Stereographers work from pre-production (e.g. Layout Stereographers) to post production (e.g. Stereo Compositors). This is a technical and creative role.

Personal attributes that are needed to succeed in this role include:

- A passion for cinematic storytelling and stereography
- Strong collaboration and communication skills
- Adaptable, curious and innovative
- Excellent problem-solver
- Technically oriented
- High level of tolerance for viewing stereographic imagery over a long period of time

5/ EDITORIAL DEPARTMENT

NB: The following roles are specific to VFX, Animation & Virtual Production Editorial Departments. Please see Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document for a full list of Editorial Department roles.

Post Producer

The Post Producer manages the budgets, schedules, contracts, operations, and clients. Both the Post Production Supervisor and Post Producer need excellent people and time management skills to ensure that the process remains smooth and on schedule. As with all roles at the tail end of any production, time constraints, and last-minute changes require an agile and adaptive approach to management. They may need to juggle several films or episodes at any given time while working long hours and tight deadlines.[54]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Ability to remain calm in stressful situations
- Attention to detail
- Strong interpersonal & communication skills
- Strong negotiation skills
- Industry-standard editing software proficiency
- People-oriented

Post Supervisor (Animation Post Supervisor, VFX Post Supervisor, Motion Capture Post Supervisor)

Reporting to the Producer, the Post Supervisor manages the post production schedule, processes, and budget.[55] Depending on the production, the Post Supervisor may also work with the Post Producer, whereas the Post Supervisor manages the creative team and technical execution. As with all roles at the tail end of any production, time constraints, and last-minute changes require an agile and adaptive approach to management. They may need to juggle several films or episodes at any given time while working long hours and tight deadlines.[56]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Ability to remain calm in stressful situations
- Attention to detail
- Strong interpersonal & communication skills
- Strong negotiation skills
- Industry-standard editing software proficiency
- People-oriented

[54] Media Match website. What do Post Producers Do? https://www.media-match.com/usa/jobtypes/post-production-supervisor-jobs-402753.php#:~:text=Post%20Production%20Supervisors%20are%20responsible,negative%20cutters)%20and%20the%20production. Accessed 28/10/2022.
[55] ScreenSkills website. What does a post-production supervisor do? https://www.screenskills.com/job-profiles/browse/film-and-tv-drama/post-production/post-production-supervisor/. Accessed 31/10/2022.
[56] Media Match website. What do Post Producers Do? https://www.media-match.com/usa/jobtypes/post-production-supervisor-jobs-402753.php#:~:text=Post%20Production%20Supervisors%20are%20responsible,negative%20cutters)%20and%20the%20production. Accessed 28/10/2022.

Animation Editor

In Animation, the Editor works closely with the Animation Director and Producer to "craft the telling of the story from the start of the production to the finish."[57] Their storytelling skills are critical in the early stages of a project as their approved edits determine the shots, characters, backgrounds, and other elements that will be needed for the project. This method ensures that expensive resources are allocated to necessary elements for the story and avoid wastage.

In VFX, the Editor is "the link between the physical production team, which shoots the live-action footage, and the VFX studio that does the visual effects […and] are responsible for ensuring that the VFX Artists at the VFX studio have everything that they need to create their work."[58] Further details on the VFX Editor are available in Ausfilm's *Australian Screen Sector Roles: Physical & Post Productio*n document.

Personal attributes that are needed to succeed in this role include:

- Passion for animation and/or VFX storytelling
- Curiosity and understanding of animation and/or VFX processes
- Collaboration and problem-solving skills
- Industry-standard editing software proficiency
- Tech savvy and ability to learn new tools of the trade

Visual Effects (VFX) Editor

VFX Editors are the liaison between the physical production team and the VFX team. They can work "client-side" or "in-house." "Client-side" VFX Editors will work on set during the shoot to ensure that shot footage is suitable for VFX work. They take notes from the Director to keep the flow of information moving through the VFX pipeline, and provide the director updates on the VFX look and feel against the previsualisations. "In-house" VFX Editors manage the work being undertaken by the VFX facility to ensure that the Director's vision is being fulfilled in the executed work. They are responsible for the workflow and feedback for client approvals. Once approved, the VFX Editor is responsible for the delivery of the final shots to the editing team, the most current cut (edit), and oversees the passing of work back to the team that is editing the film or TV program.[59]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Ability to remain calm in stressful situations
- Attention to detail
- Strong interpersonal & communication skills
- Industry-standard editing software proficiency

Animatic Editor

The Animatic Editor is engaged in Animation projects to edit storyboard elements to assemble a timed "animatic" (or moving storyboard) with a recorded soundtrack. The Animatic Editor works closely with the Director to fine-tune the pacing and audio recordings."[60] The animatic is the road map for an animated project and is the basis for decisions about resources needed for the project. The Animatic Editor is engaged during the development and pre-production phase of a project.

Personal attributes that are needed to succeed in this role include:

- Passion for animation and/or VFX storytelling
- Curiosity and understanding of animation processes
- Collaboration and problem-solving skills
- Industry-standard editing software proficiency
- Tech savvy and ability to learn new tools of the trade

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[57] ScreenSkills website. What does an editor do? https://www.screenskills.com/job-profiles/browse/animation/post-production/editor-animation/#:~:text=They%20plan%20the%20different%20scenes,be%20approved%20by%20the%20producer.
[58] ScreenSkills website. What does a VFX editor do? https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/vfx-editor/#:~:text=What%20does%20a%20VFX%20editor,film%20or%20TV%20production%20company. Accessed 22/12/2022.
[59] ScreenSkills website. What does a VFX editor do? https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/vfx-editor. Accessed 17/01/2023.
[60] ToonBoom website. Job Descriptions. https://learn.toonboom.com/modules/animation-workflow/topic/job-descriptions#:~:text=Animatic%20Editor,no%20more%20changes%20are%20made. Accessed 22/12/2022.

Assistant Editor (aka Assistant Animation Editor, Assistant Visual Effects (VFX) Editor, Assistant VP Editor, Edit Assistant)

The Edit Assistant supports the Editor with tasks to ensure the smooth running of the editing process. Their duties may include organising files and putting together rough assemblies for the Editor. "Edit Assistants are sometimes responsible for administrative jobs such as booking sessions with clients and in-house staff for the Editor. They make sure equipment is working and keep abreast of changes in software and technology. They also place orders with suppliers when needed."[61]

Personal attributes that are needed to succeed in this role include:

- Passion for animation and/or VFX storytelling
- Curiosity and understanding of animation and/or VFX processes
- Collaboration and problem-solving skills
- Industry-standard editing software proficiency
- Tech savvy and ability to learn new tools of the trade

Colour Editor

The Colour Editor is engaged in 2D animation. They are responsible for assembling "the colour frames and works with the Director to cut the show to length. The [Colour] Editor renders the show and sends it on to the post facility for the final picture/audio mix. Copies of the film's final version prior to online editing, known as a picture lock, are sent (accompanied by running timecode) to the Music Composer and Sound Editors so they can begin the creation and assembly of those elements."[62]

Personal attributes that are needed to succeed in this role include:

- Passion for animation and/or VFX storytelling
- Curiosity and understanding of animation and/or VFX processes
- Collaboration and problem-solving skills
- Industry-standard editing software proficiency
- Tech savvy and ability to learn new tools of the trade

Colour Grading Artist

The Colour Grader liaises with the DOP, Director, Editor, VFX Vendors, and production departments about work relating to colour manipulation of the picture in post production. They use the science and psychology of colour to communicate the Director and the DOP's vision. Colour Graders need to have strong storytelling and technical skills. According to the Colorist Society (USA), Colourists follow "a film production usually for the whole period of production. They evaluate and work on the images in collaboration with the DOP to enable the highest possible quality for the final product, following creative decisions and the visual concept."[63] They may also supply LUTs for the Editorial Department for work-in-progress screenings, and consult on workflows where VFX might be integrated into the picture.

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Artistry and creativity
- Attention to detail
- Strong interpersonal & communication skills
- Industry-standard grading software proficiency
- Technically oriented

[61] ScreenSkills website. What does an edit assistant do? https://www.screenskills.com/job-profiles/browse/animation/post-production/edit-assistant/#:~:text=What%20does%20an%20edit%20assistant,effects%2C%20and%20the%20musical%20soundtrack. and https://startup.jobs/assistant-editor-sony-pictures-animation-2424370

[62] Toonboom website. Job Descriptions. https://learn.toonboom.com/modules/animation-workflow/topic/job-descriptions. 12/3/2023.

[63] Colorist Society. Role of the Colorist. https://coloristsociety.com/role-of-the-colorist. Accessed 28/10/2022.

Colour Grading Supervisor

Supervising Colourists manage teams on larger projects to oversee the QC process and liaise with clients, Directors, and Producers. They are Senior Colourists with strong negotiation and leadership skills to ensure that the team delivers on time and within budget to QC standards.

Personal attributes that are needed to succeed in this role include:

- Strong negotiation skills
- Leadership
- Strong interpersonal & communication skills
- Industry-standard grading software proficiency

Storyboard Artist

Storyboard Artists work with the Head of Story to translate the script into visual form. "They produce a series of panels of images to plan the shots and ensure continuity between them. These form the basis for the animation in the next stage of production. […] They may be required to work using various types of software to prepare panels for editorial."[64]

Personal attributes that are needed to succeed in this role include:

- Passion for animated/cinematic storytelling and performance
- High level of understanding of cameras and lenses
- Excellent listener and observer
- Strong communicator and problem-solver
- Exceptional drawing skills
- Patience and resilience

Storyboard Assistant

The Storyboard Assistant "supports the Storyboard Artist by cleaning up storyboard drawings, adding additional characters, filling background details, etc."[65]

Personal attributes that are needed to succeed in this role include:

- Passion for animated/cinematic storytelling and performance
- High level of understanding of cameras and lenses
- Excellent listener and observer
- Strong communicator and problem-solver
- Exceptional drawing skills
- Patience and resilience

Post Production Department Crew

See Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document.

Sound Department Crew

See Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document.

Music Department Crew

See Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document.

[64] CG Spectrum. Career Pathways. Storyboard Artist. https://www.cgspectrum.com/career-pathways/storyboard-artist. Accessed 22/12/2022.
[65] Animation Career Review website. Storyboard Assistant - Career Profile. https://www.animationcareerreview.com/articles/storyboard-assistant-career-profile#:~:text=In%20general%2C%20storyboard%20assistants%20clean,as%20needed%20prior%20to%20editing. Accessed 22/12/2022.

6/ PRODUCING

Executive Producer (VFX, Animation, and/or Virtual Production)

Executive Producers "consult on projects and provide specialist expertise. They may also help Producers on the business side of fundraising for projects. The title of Executive Producer may also be credited to the original creator of the source material that is being adapted."[66]

Personal attributes that are needed to succeed in this role include:

- Strategic leadership and creativity
- Business-oriented
- Strong influencing and negotiating skills
- Passion for cinematic and/or animated storytelling

Supervising Producer (aka Supervising Digital Effects Producer)

Supervising Producer support Producers and Production Managers to ensure that projects are delivered to the highest quality on time and on budget. They work closely with the Executive Producer, Line Producer, and CG Supervisor from development, pre-production, production, and post production to establish the vision of the project and strategically manage artists and resources.

Personal attributes that are needed to succeed in this role include:

- Strategic leadership and creativity
- Business-oriented
- Strong influencing and negotiating skills
- Passion for cinematic and/or animated storytelling

Senior VFX Producer (Senior Visual Effects Producer)

The Senior VFX Producer has ownership of bidding, budgeting, and forecasting for projects. They create and track project schedules and overall VFX production schedules. They need knowledge of VFX production to be able to accurately provide clients with project scope and estimates of project budget and schedule, and be able to track and manage the reporting of progress work. They work with Production Management and Talent Management teams to ensure that the capacity and resourcing needs are met.

Personal attributes that are needed to succeed in this role include:

- Strategic leadership and creativity
- Business-oriented
- Strong influencing and negotiating skills
- 3D animation software skills including high levels of digital literacy
- Excellent people skills

VFX Producer (aka Digital/Visual Effects Producer)

The VFX Producer has oversight over the management of the process of generating visual effects for film and television from the beginning to the end of the production pipeline. They manage the budget and schedule for the work. They work closely with the Physical Production team on-set to ensure that the VFX requirements are met in accordance with the vision of the project. They oversee the VFX process through to post production, working with Editors, Producers, and Directors to ensure the highest quality of VFX delivery.

Personal attributes that are needed to succeed in this role include:

- Leadership and ability to nurture talent
- Passion for the intersection of creativity and technology
- Excellent listener and observer
- Strong communicator and problem-solver
- Understanding of physics and movement
- 3D animation software skills including high levels of digital literacy
- Enjoys physical activity

[66] Screenskills website. What does a producer do? https://www.screenskills.com/job-profiles/browse/animation/production-management/producer-animation/#:~:text=Executive%20producer,side%20of%20fundraising%20for%20projects. Accessed 28/2/2023.

VFX Associate Producer

The VFX Associate Producer reports to the Supervising Producer (creative) and Line Producer (administration) and is responsible for production planning, scheduling, production, and delivery. They usually have Production Management experience.

Personal attributes that are needed to succeed in this role include:

- Strategic leadership and creativity
- Business-oriented
- Strong influencing and negotiating skills
- 3D animation software skills including high levels of digital literacy
- Excellent people skills

Animation Producer

Animation Producers work closely with the Animation Director, Executive Producer, and production team from project conception, pitching, and financing, production to post production, to final delivery. They oversee the budget, creative teams, and creative vision for the project. "Producers also have a deep understanding of animation and its creative possibilities. They allow the animators the freedom to experiment, at the same time as keeping the production on schedule."[67]

Personal attributes that are needed to succeed in this role include:

- Leadership and ability to nurture talent
- Passion for animated storytelling
- 2D and/or 3D animation software skills including high levels of digital literacy
- Business acumen

Motion Capture Producer

Motion Capture Producers have both technical and creative skills in Virtual Production and VP Storytelling. The work with clients from pitching, previs, production, and post production to realise the creative vision of the work. They have oversight over the Virtual Production project and delivery of the creative vision.[68]

Personal attributes that are needed to succeed in this role include:

- Leadership and ability to nurture talent
- Passion for the intersection of creativity and technology
- Excellent listener and observer
- Strong communicator and problem-solver
- Understanding of physics and movement
- 3D animation software skills including high levels of digital literacy
- Enjoys physical activity

[67] Screenskills website. Producer (Animation). https://www.screenskills.com/job-profiles/browse/animation/production-management/producer-animation. Accessed 1/2/2023.
[68] The Virtual Production Field Guild. Unreal Engine. https://cdn2.unrealengine.com/vp-field-guide-v1-3-01-f0bce45b6319.pdf. Accessed 1/2/2023.

7.1/ PRODUCTION: PRODUCTION MANAGEMENT

Line Producer (aka Visual Effects (VFX) Line Producer/Animation Line Producer/Head of Production)

A VFX Line Producer is the most senior below-the-line role. They are usually attached to large projects and "work closely with the overseeing producer, supervisors, and leads."[69] Their responsibilities include planning and management of the budget and financial resources for a VFX or animation production. This is the most senior below-the-line crew role, requiring high levels of interpersonal, organisational, contracting, booking, scheduling, and financial skills.

Personal attributes that are needed to succeed in this role include:

- Leadership and management skills
- Strong communicator and problem-solver
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs

Production Manager (aka Digital/Visual Effects (VFX) Production Manager, Animation Production Manager, Virtual Production Manager)

The Production Manager reports to the VFX/Animation Line Producer or VP Producer. They have responsibility for the creation of detailed schedules and managing the budget. They often work with the VFX/Animation/VP Production Coordinator to schedule work, oversee casting or hiring of artists, and drafting contracts. "They liaise with the VFX Artists and Technical Directors (TDs) from all parts of the VFX pipeline to see that work is completed on time."[70] They also liaise with Production Managers on Physical Productions.

Personal attributes that are needed to succeed in this role include:

- Leadership and management skills
- Strong communicator and problem-solver
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs

Associate Production Manager (aka Visual Effects (VFX) Associate Production Manager)

Associate Production Managers (APM) may be engaged on larger projects to oversee a particular department area (e.g., Development, Editorial, Story). They may report to the Production Manager, working closely with Executives and the Head of Departments to ensure that milestones are met according to the creative vision.

Personal attributes that are needed to succeed in this role include:

- Leadership and management skills
- Strong communicator and problem-solver
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs

[69] Careers in Film website. VFX Line Producer. https://www.careersinscreen.ie/role/vfx-line-producer/. Accessed 9/3/2023.
[70] Screenskills website. What does a production manager do? https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/production-manager-visual-effects-vfx/. Accessed 9/3/2023.

Production Coordinator (aka Animation Production Coordinator, VFX Production Coordinator, Virtual Production Coordinator)

Production Coordinators in Animation and/or VFX projects report to the Production Manager or Producer. Their responsibilities include ensuring the smooth running of the VFX project, arranging the "day-to-day running of the team and, making sure everyone has the information they need to work effectively."[71] In VFX projects, the Production Coordinators "organise the movement of the assets through the VFX pipeline," and in animation projects, the Production Coordinators "keep everything in the animation pipeline running smoothly by supporting all departments with their production requirements."[72]

Personal attributes that are needed to succeed in this role include:

- Strong communicator and problem-solver
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs

Assistant Coordinator (aka Visual Effects (VFX) Assistant Coordinator, Assistant Coordinator (Animation), Assistant VP Coordinator, VFX/Animation Runner, Production Assistant, Production Runner)

Assistant Coordinators are entry-level roles in the animation, VFX, and VP industries. They support the entire team and ensure that team members have what they need to get their jobs done. They "deliver materials and messages between departments. They organise meetings and schedules. They keep the office clean and tidy and might work on reception or be responsible for locking up. They also make a lot of tea and coffee."[73]

Personal attributes that are needed to succeed in this role include:

- Strong communicator and problem-solver
- Fast learner and strong collaborator
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs
- Enjoys physical activity

Motion Capture Production Assistant

The Motion Capture Production Assistant role involves working closely with the Motion Capture Producer, Stage Technician, and other department HoDs. They manage the day-to-day upkeep of VP and MoCap systems, admin, and general errands. This is a technical and administrative role that requires an understanding of the creative process.

Personal attributes that are needed to succeed in this role include:

- Passion for the intersection of creativity and technology
- Excellent listener and observer
- Strong communicator and problem-solver
- Pro-actively asks questions and is good at taking instructions
- 3D animation software skills including high levels of digital literacy
- Enjoys physical activity

[71] Screenskills website. VFX Production Coordinator. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/production-coordinator-visual-effects-vfx. Accessed 12/3/2023.
[72] Screenskills website. Animation Production Coordinator. https://www.screenskills.com/job-profiles/browse/animation/production-management/production-coordinator-animation. Accessed 12/3/2023.
[73] Screenskills website. Runner. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/runner-visual-effects-vfx/. Accessed 12/3/2023.

Production Accountant

Production Accountants manage the Production Account team. On large productions, they may manage 10 Production Accounts Assistants as well as Payroll Accountant(s), so strong people management skills are required for this role, along with strong time management skills. Production Accountants apply accounting skills to productions from preproduction, production through to post production and delivery. They need to have a strong understanding of the filmmaking departments and the creative process as they need to produce cost forecasts and respond to changes in the budget or script. "They calculate finances, work out the cost of a production, talk to the completion guarantor (an insurance policy to make sure the film is delivered on time and on budget) and control the cash flow, or spending."[74] Production Accountants produce daily and weekly cost reports, keeping the production on time and on budget. They can also manage payroll and payments, accounting for all costs and payments.

Personal attributes that are needed to succeed in this role include:

- Good listener, communicator and problem-solver
- Attention to detail
- Curiosity

[74] ScreenSkills website. What does a production accountant do? https://www.screenskills.com/job-profiles/browse/film-and-tv-drama/production-management/production-accountant/. Accessed 1/11/2022.

7.2/ PRODUCTION: MOTION/PERFORMANCE CAPTURE

Motion Capture Supervisor

The Motion Capture Supervisor has oversight of the Motion Capture team and are responsible for all aspects of Motion Capture shoots including managing schedules and budgets, equipment and software, troubleshooting and client management.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

Motion Capture Lead

The Motion Capture (MoCap) lead supervises the motion capture process including on-set data collection and camera tracking systems. They are responsible for establishing the motion capture workflows with the Camera and VP departments, working closely with the VP Supervisor.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Motion Capture Coordinator (aka VP Coordinator)

The Motion Capture Coordinator has oversight of motion capture production including scheduling, budgeting, and managing teams and stakeholders.

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented
- Understanding of anatomy and physics

Motion Capture Operator

The Motion Capture Operator oversees the process of capturing motion capture data and all stage operations. Their responsibilities include setting up and calibrating all equipment including stages, hardware and devices, and streamlining the clean-up processes. They ensure that the stages and equipment are safe, clean and in good working order.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

Motion Capture Assistant

Motion Capture Assistants are entry level roles that support Motion Capture teams in administrative and on-set tasks. They may be involved in troubleshooting and managing call sheets.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented
- Enjoys physical activity

Motion Capture Technician

The MoCap Technician (aka MoCap Animator) works closely with the MoCap Lead in the capture, clean-up, and processing of high quality 3D motion capture data. They are responsible for the set up and maintenance of the motion capture studio. They manage the capture station during shoots and be responsible for high quality marker tracking and motion capture.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented
- Enjoys physical activity

Motion Capture Camera Operator

The Motion Capture Camera Operator is responsible for camera and hardware setup, onset coordination, and data management for Virtual Production shoots. They operate the motion capture cameras and camera tracking systems, and integrate data into games and MoCap systems.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented
- Enjoys physical activity

7.3/ PRODUCTION: ON-SET VFX

VFX Supervisor (Digital/Visual Effects Supervisor)

VFX Supervisors have oversight over the entire VFX project. "They manage the VFX pipeline, including all of the VFX artists that work in this process. They have ultimate responsibility for all the VFX elements produced for a project by their company or studio. VFX Supervisors work on a project from the early stages of preproduction. They are the main point of liaison between a VFX studio and the Director or Producer of the film or TV programme. Together, they decide on what VFX is needed for every shot of the film. VFX supervisors then work with the VFX artists to create prototype materials to present. These can include concept art and 3D computer-generated images (CG). The prototype materials help to inform the style of the VFX in the production."[75] Where there are multiple VFX units, a Senior VFX Supervisor will oversee a team of VFX Supervisors, Associate VFX Supervisors and Additional VFX Supervisors.

Personal attributes that are needed to succeed in this role include:

- A passion for visual effects, photography and cinematography
- A collaborative and problem-solving mindset
- Practical and detail-oriented
- Creative and innovative
- Strong communicator
- 3D animation software skills including high levels of digital literacy
- Leadership

Senior VFX Supervisor (Senior Visual Effects Supervisor)

See VFX Supervisor.

Associate VFX Supervisor (aka Visual Effects Associate Supervisor)

The Associate VFX Supervisor reports to the VFX Supervisor to work on strategic, analytical and technical assessments to evaluate project schedules and requirements. They may collaborate with the VFX Supervisor, CG Supervisor and Heads of Department to identify creative and technical approaches for projects.

Personal attributes that are needed to succeed in this role include:

- A passion for visual effects, photography and cinematography
- A collaborative and problem-solving mindset
- Practical and detail-oriented
- Creative and innovative
- Strong communicator and great with teamwork
- 3D animation software skills including high levels of digital literacy
- Leadership

Additional VFX Supervisor (aka Additional Visual Effects Supervisor)

See VFX Supervisor.

Production Supervisor (aka Digital/Visual Effects (VFX) Production Supervisor, Virtual Production Supervisor)

The Production Supervisor has oversight of on-set department processes, procedures, and deliverables. They ensure that all aspects of the production and deliverables are aligned to the creative vision of the Director and Producer. They may be assigned to specific departments or groups of departments. They support the Production Manager and Producers to assign work and track tasks.

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Practical and detail-oriented
- Creative and innovative
- Strong communicator and great with teamwork
- 3D animation software skills including high levels of digital literacy
- Leadership

[75] Screenskills website. VFX Supervisor. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/on-set/vfx-supervisor. Accessed 14/3/2023.

VFX Consultant (aka Visual Effects Consultant)

The VFX Consultant is responsible for creating mock-ups and simulations for a VFX project[76] and may be engaged to work on highly specialised aspects of a VFX project, and work independently from the core VFX team.

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Practical and detail-oriented
- Creative and innovative
- Strong communicator and great with teamwork
- 3D animation software skills including high levels of digital literacy

Production Coordinator (Digital Effects (VFX) Coordinator, Animation Coordinator, VP/MoCap Coordinator, Production Support)

Production Coordinators support the VFX Production team to ensure that VFX projects run smoothly and efficiently. They work "under the Production Manager or Producer, they help to arrange the day-to-day running of the team and make sure everyone has the information they need to work effectively. They organise the movement of the assets through the VFX pipeline. They are responsible for distributing the assets and artwork needed to the relevant departments. They relay supervisor or client briefs to artists and feedback to the relevant teams about the progress of the work. They keep production databases updated with the status of shots and take detailed notes in meetings. They also track costs against the budget. Scheduling external meetings is also often a part of their job and they keep their client-side counterpart updated about the status of the project."[77]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Practical and detail-oriented
- Creative and innovative
- Strong communicator and great with teamwork
- 2D and/or 3D animation software skills including high levels of digital literacy
- Leadership

VFX Co-Supervisor (aka Co-Visual Effects (VFX) Supervisor)

See VFX Supervisor.

VFX Technical Support (aka Visual Effects Technical Support)

Technical Support is often required on-set to ensure the smooth running of the IT equipment and to resolve issues as they arise. They may configure equipment and software and diagnose and resolve technical issues.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Coding and animation software skills including high levels of digital literacy
- Attention to detail and technically oriented

VFX Camera Department Crew

See the Camera Department section in Ausfilm's *Australian Screen Sector Roles: Physical & Post Production* document.

[76] Hybrid Studio website. VFX Consultant. https://hybridstudio.in/blog/vfx-consultant.php#. Accessed 14/3/2023.
[77] Screenskills website. Production Coordinator (VFX). https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/production-coordinator-visual-effects-vfx. Accessed 14/3/2023.

7.4/ PRODUCTION: REAL-TIME & LED WALL IN-CAMERA VFX (ICVFX)

LED Wall Cinematographer (aka Virtual Production Director of Photography, VP DOP)

The LED Wall Cinematographer (or VP DOP) role "combines traditional live-action and real-time virtual production techniques, including camera tracking, real-time virtual scene output, physical set dressing, and traditional on-set lighting"[78] The VP DOP is responsible for "everything seen in the frame" from preproduction to post.[79] This role works closely with the VFX Supervisor, Production Designer, Art Department, and VFX teams.

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Artistry and creativity
- Methodological thinking
- Enjoys physical activity
- Attention to detail
- Storyteller
- Leadership

LED Technician (Virtual Production Stage Technician)

The LED Technician manages and maintains the Virtual Production LED screens and is an engineering role. They ensure that the LED screens are working correctly and troubleshoot any issues that arise. "LEDs have been used across live events and broadcasts for some time, so many AV technicians will find they already have the required skills to become an LED Engineer. Other relevant skills include experience in motion capture and camera tracking systems, plus knowledge of Unreal Engine and other real-time tools."[80]

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

Live Compositing Artist

Live Compositing Artists work on-set to ensure that Virtual sets and props "blend seamlessly with their live-action counterparts through colour correction and lighting adjustments."[81] They have an aptitude for compositing so they can quickly put together live-action footage with a CG background in real-time on-set. This is "a form of postvis to assist the editorial process and post production."[82]

Personal attributes that are needed to succeed in this role include:

- Passion for the interface between art and technology
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Compositing software skills including high levels of digital literacy
- Attention to detail and technically oriented

[78] CG Spectrum website. Launch your career in virtual production. https://www.cgspectrum.com/hubfs/virtualproduction-careerguide.pdf. Accessed 12/3/2023.
[79] Unreal Engine Virtual Production Field Guide. https://www.unrealengine.com/vpfieldguide. Accessed 12/3/2023.
[80] Newcast Studio website. New roles in virtual production and how to get them. https://www.newscaststudio.com/2022/08/23/virtual-production-jobs/. Accessed 12/3/2023.
[81] CG Spectrum website. Launch your career in virtual production. https://www.cgspectrum.com/hubfs/virtualproduction-careerguide.pdf. Accessed 12/3/2023
[82] Ibid.

Real-Time 3D Animator (aka Realtime Simulcam Animator)

A Real-Time 3D Animator uses a game engine (e.g., Unreal Engine, Unity) to create and render 3D animations in real-time. "During pre-production and post production, a real-time artist can help with the visualization of scenes in a production, creating previs, postvis, stuntvis, and more. During the production stage, real-time artists can work on set, assisting with various elements and duties involving the LED volume."[83]

Personal attributes that are needed to succeed in this role include:

- Passion for animation and cinematic storytelling
- Excellent listener and observer
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- 3D animation software skills including high levels of digital literacy
- Technically oriented

Real-Time Compositor

See Live Compositing Artist.

Real-Time Colourist (Live Colour Grader)

The Real-Time Colourist can work in studios, on-set, or remotely. "Directors heavily rely on synchronous review during edit sessions, VFX review, sound spotting sessions, or colour correction sessions. Synchronous review is especially important in animation, where dozens of animators or lighters are touching the same character and need feedback from the Director, who often acts out how he wants a character to look or behave."[84]

Personal attributes that are needed to succeed in this role include:

- Passion for animation and cinematic storytelling
- Excellent listener and observer
- Strong understanding of colour science
- Strong communicator, problem-solver and collaborator
- Grading skills
- Able to give and receive feedback
- Technically oriented

Virtual Production Digital Imaging Technician (aka DIT, In-Camera VFX DIT)

According to the Virtual Production Glossary, the DIT is the "camera department crew member who works in collaboration with the Cinematographer on workflow, systemization, camera settings, signal integrity, and image manipulation to achieve the highest image quality and creative goals of cinematography in the digital realm. The DIT is usually on set during shooting and a good resource for the VFX Supervisor."[85]

Personal attributes that are needed to succeed in this role include:

- Strong communicator, problem-solver and collaborator
- Technically oriented
- Organised
- Meticulous with detail

Stage Manager

The Stage Manager oversees the LED stage and leads the scoping, implementation and integration of Virtual Production (including Motion Capture) systems and technologies to meet the creative and budgetary goals of a production.

Personal attributes that are needed to succeed in this role include:

- Strong communicator, problem-solver and collaborator
- Technically oriented
- Organised
- Meticulous with detail

[83] CG Spectrum website. What is a 3D Real-time Artist? https://www.cgspectrum.com/blog/become-realtime-3d-artist. Accessed 12/3/2023.
[84] Frame.IO website. https://blog.frame.io/2020/05/04/workflow-from-home-episode-9-live-remote-color-grading/. Accessed 12/3/2023.
[85] Visual Effects Society (VES) Virtual Production Glossary. DIT. https://www.vpglossary.com/vesglossary/digital-imaging-technician-dit/. Accessed 12/3/2023.

Virtual Production (VP) Engine Generalist

This role involves skills as a Games Engine Engineer or Developer. The Engine Generalist is "responsible for maintaining and operating the real-time engine within the volume, and loading and operating assets. This is a mission-critical role because the engine is what's generating the live environment displayed on the screen in an LED volume. This position might be split among several operators, each responsible for different areas such as virtual camera position, lighting settings, playback of virtual interactive elements, etc."[86]

Personal attributes that are needed to succeed in this role include:

- Strong communicator, problem-solver and collaborator
- Technically oriented
- Organised
- Games engine coding and software skills
- Meticulous with detail

Virtual Production (VP) Technical Artist

Technical Assistants work with the Technology team to assist the Engineering team with day-to-day functions including maintenance of facilities and equipment, calibrating cameras, upgrading software and systems, and troubleshooting systems and equipment.

Personal attributes that are needed to succeed in this role include:

- Strong communicator, problem-solver and collaborator
- Technically oriented
- Organised
- Games engine coding and software skills
- Meticulous with detail

Systems Operator

See Motion Capture Operator.

Systems Coordinator

See Motion Capture Coordinator.

Systems Technician

See Motion Capture Technician.

Virtual Production Crew

Virtual Production Crew roles are listed throughout this document and in section 5.5 Production: Real-Time VFX (VP). For a comprehensive description of crew roles, please see Nathan Bazley's Virtual Production (IC VFX) Skills List available here: https://drive.google.com/file/d/16Ne5PQ3P2Mnb_mF5YeqRy4bQ_x1f0dlv/view.

[86] Frame.IO Insider website. Want a Job in Virtual Production? Here Are 12 Roles To Get Your Foot in the Door. https://blog.frame.io/2022/02/07/virtual-production-jobs-roles-careers/. Accessed 12/3/2023.

8.1/ PRODUCTION (OTHER): ART DEPARTMENT

Production Designer (Physical Art Department)

The Production Designer works closely with the Director and Department Heads to translate a script into visual concepts and plans for physical production components of a VP or VFX project. They develop the artistic vision with the Director, design creative concepts for environments, characters, props, and visual effects, and establish the colour script and mood board. They may supervise work being undertaken by the Art Department.

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Artistry and creativity
- Detail-oriented
- Strong communicator
- Enjoys physical activity
- Storyteller
- Leadership

Art Director (aka Visual Effects/VFX Art Director, Animation Art Director, Virtual Production Art Director/VAD)

The Art Director on VFX, Animation & VP projects interprets the script into visual form. They are often "highly skilled location/layout designers and skilled background painters. In the development process that takes place at the very beginning of the production, this person works with the Director and Design Supervisor to develop the visual and colour style of the show and ensures the consistency of that look throughout the production […]. They are responsible for ensuring all artwork is of high quality and in keeping with the Director's vision. They are also responsible for making sure everyone in the Art Department stays on budget and on schedule."[87]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Artistry and creativity
- Detail-oriented
- Organised
- Strong communicator
- Fastidious with occupational health and safety rules
- Leadership

Art Department Assistant

Art Department Assistants are entry-level roles in the VFX and/or Animation Art Department. They are known as "Art Department Assistant/PA/Runner, Set Decorating Assistant/PA/Runner, or a Graphics Assistant/PA/Runner."[88] They report to the Supervising Art Director and "fill gaps and help out wherever they are needed in the Art Department."[89]

Personal attributes that are needed to succeed in this role include:

- Strong communicator and problem-solver
- Fast learner and strong collaborator
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs
- Enjoys physical activity

[87] ScreenSkills website. What does an art director do? https://www.screenskills.com/job-profiles/browse/animation/pre-production/art-director-animation/. Accessed 23/12/2022.
[88] British Film Designers Guild website. How to get into the Art Department. https://britishfilmdesigners.com/how-to-get-into-the-art-department/. Accessed 1/2/2023.
[89] Ibid

Concept Artist

The Concept Artist works with the Production Designer to develop and conceptualise the design of the production. The Concept Artist uses a range of tools to visualise the Production Designer's vision including "conventional painting or drawing or in a range of ever-evolving digital programs such as 3D Max, Rhino, Photoshop, or a combination of all." The concept art produced by the artist acts as a brief to the broader production team as they contain detailed images of key scenes and sets. " The concept artist's work is used to discuss a range of visual elements including design of the set, lighting, lens sizes, and camera positions."[90]

Personal attributes that are needed to succeed in this role include:

- A collaborative and problem-solving mindset
- Artistry and creativity
- Good communicator
- Good with technology
- Loves art, drawing, illustration and visual research

Location Designer

The Location Designer works closely with the Art Director to design locations and backgrounds for Animation, VFX, and Virtual Production projects. They need to work efficiently and effectively to establish workflows to create set designs, floor plans, and orthographic designs, review storyboard panels to create background designs to provide finished art for the production.

Personal attributes that are needed to succeed in this role include:

- Strong communicator and problem-solver
- A passion for illustration and design, architecture, and landscapes
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs
- Enjoys physical activity

Colour Stylist

The Colour Stylist works closely with the Art Director and Director to design "the colours and ambiance for the production and balance the characters, props, and effects with the locations' palettes. This contributes a sense of harmony or contrast, as necessary, to the show."[91] They work across a range of departments to ensure that the colour design is in keeping with the aesthetic vision of the project.

Personal attributes that are needed to succeed in this role include:

- Strong communicator and problem-solver
- A passion for colour science
- Highly organised and methodological
- Stays calm in stressful situations
- Ability to anticipate needs

Set Dresser

See the description in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production*.

Model Maker

See the description in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production*.

Other Art Department Crew

See the department and descriptions in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production* document.

[90] Ibid
[91] Toon Boom website. Job Descriptions. https://learn.toonboom.com/modules/animation-workflow/topic/job-descriptions. Accessed 23/12/2022.

8.2/ PRODUCTION (OTHER): DATA CAPTURE & MANAGEMENT

Survey Supervisor

The Survey Supervisor oversees the Survey team to ensure that accurate information and data is captured to enable accurate, high-quality VFX work. Information includes lens data, reference images, photogrammetry, set scans and motion control data from live-action shoots. They ensure that efficient workflows are developed to deliver data to the CG Supervisor and VFX teams.

Personal attributes that are needed to succeed in this role include:

- Excellent listener and observer
- Strong understanding of colour science
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- Technically oriented

Surveyor

Set Surveyors are responsible for accurately collecting data from shoots including lens data, reference images, photogrammetry, set scans and motion control data, and delivered to the CG Supervisor and VFX teams.

Personal attributes that are needed to succeed in this role include:

- Excellent listener and observer
- Strong understanding of colour science
- Strong communicator, problem-solver and collaborator
- Able to give and receive feedback
- Technically oriented

Data Capture Technical Director (aka Data Capture TD, Visual Effects Data Capture TD, Lidar/ Photogrammetry/MoCap Data Capture TD)

Data Capture TDs are responsible for the collection of data and information relating to the "live-action footage that the teams in the VFX studio need to add the visual effects. They take photographs of the set and the way the cameras are positioned. They "capture data" about the type of lens type being used, its focal length, filters, focus and colour temperature. They also record the camera height, camera mount and distance between the camera and actor, and other details. And they take photos of surfaces so that the textures can be recreated digitally later on."[92] This information is critical to creating realistic CGI visual effects.

Personal attributes that are needed to succeed in this role include:

- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

[92] ScreenSkills website. Data Technician. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/on-set/data-capture-technician/. Accessed 2/2/2023.

Data Coordinator (aka Visual Effects (VFX) Data Coordinator)

Data Coordinators ensure that captured data is checked, sorted, corrected and situated correctly within established pipelines. They are responsible for ingesting data from multiple sources, moving data as required, accurate record keeping and archiving data.

Personal attributes that are needed to succeed in this role include:

- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

Data Manager (aka VFX Digital Asset Manager, Visual Effects Digital Asset Manager)

The Data Manager manages monitors and manages the Data team. They flag and investigate technical issues with data collection and delivery to all CG Departments. They manage storage space and ensure the smooth use of data along the pipeline.

Personal attributes that are needed to succeed in this role include:

- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

Data Assistant

The Data Assistant reports to the Data Manager, helping manage monitors and managing the Data team. They flag and investigate technical issues with data collection and delivery to all CG Departments. They manage storage space and ensure the smooth use of data along the pipeline.

Personal attributes that are needed to succeed in this role include:

- Leadership and communication skills
- Ability to learn and develop technical skills to a high level
- Curious and innovative
- Adaptable, systems-thinking approach
- Strong communicator, problem-solver and collaborator
- Attention to detail and technically oriented

8.3/ PRODUCTION (OTHER): INPUT/OUTPUT

Data Input/Output (I/O) Department

The Data Input/Output (I/O) Department is responsible for organising, transferring, and storing the computer files and data for a VFX production company. The following roles work within the I/O team. The department manages "the computer storage and retrieval systems, including company hard drives. VFX companies process large amounts of data because they deal with high-quality video files and digital 3D animation files."[93] They must have knowledge of camera formats and troubleshoot any issues that come up to do with file storage.

Roles in this department include:

- I/O Supervisor
- I/O Coordinator
- Technical Director
- Engineering Supervisor
- Engineering Lead
- Engineer
- I/O Operator
- I/O Negative Cutter

These are technical IT roles. Personal attributes that are needed to succeed in these roles include:

- Passion for technology
- Strong collaborator
- Ability to learn and develop technical skills to a high level
- Adaptable, systems-thinking approach to problem-solving
- Attention to detail and technically oriented

[93] ScreenSkills website. Data input/output (I/O) technician. https://www.screenskills.com/job-profiles/browse/visual-effects-vfx/production-management/data-input-output-i-o-technician/. Accessed 12/3/2023.

9/ SCREENWRITING DEPARTMENT

Writer

Animation Writers need to add more descriptions in their scripts to establish the look and feel of the animated world. "For example, in a live-action screenplay, a writer might put: "a girl comes round the corner and bumps into a boy." In an animation script, a writer would write: "a girl rushes round the corner looking panicked, arms flailing, and collides with a boy. They both fall to the ground with a thud and the papers he is carrying fly into the air and flutter around them." [94] Members of the Writing Department include the Associate Writer and Assistant Writer. Full descriptions of Writer roles are available in Ausfilm's *Australian Screen Sector Roles: Physical & Post Production* document.

Personal attributes that are needed to succeed in this role include:

- Passion for animated storytelling
- Enjoys networking
- Creative and motivated
- Resilient and happy to receive feedback
- Excellent listener and observer
- Good with time management and solo work
- Industry-standard screenwriting software proficiency

Assistant Writer

See the description in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production.*

Associate Writer

See the description in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production*.

Story Editor

See the description in Ausfilm's *Australian Screen Industry Roles: Physical & Post Production*.

[94] ScreenSkills website. What does a writer do? https://www.screenskills.com/job-profiles/browse/animation/development/writer-animation/. Accessed 21/12/2022.

10/ OTHER: ARTIST MANAGEMENT

The following roles sit within the Artist Management department. This department exists in larger facilities/studios to manage the complex management, development and retention of highly skilled talent.

Head of Artist Management

The Head of Artist Management has oversight of a team of Artist Management Supervisors, Artist Managers, and Coordinators. The department sits outside the craft groups and are considered a standalone department.[95] The focus of this department is to pull together and develop strong teams of artists to produce work to the highest possible standard, while providing individual artists support to develop their careers. Roles in this department are people oriented. Strong communication and people management skills are essential.

Personal attributes that are needed to succeed in this role include:

- A passion for working with artists to develop their skills and support their career progression
- Creative and motivated
- Resilient and happy to receive feedback
- Excellent listener and observer
- Good with time management and solo work
- Enjoys physical activity

Artist Management Supervisor

The Artist Management Supervisor is responsible for strategically developing artists and teams. They manage a team of Artist Managers who manage the capability development of individual artists and teams. They oversee talent and career development, and ensure that Artists are able to work smoothly with Production and Supervision teams smoothly. They work closely with the HR Department to maximise outcomes in hiring and crew retention strategies and processes. Roles in this department are people oriented. Strong communication and people management skills are essential.

Personal attributes that are needed to succeed in this role include:

- A passion for working with artists to develop their skills and support their career progression
- Creative and motivated
- Resilient and happy to receive feedback
- Excellent listener and observer
- Good with time management and solo work
- Enjoys physical activity

Artist Manager

Artist Managers manage the day to day needs of artists including skills development, career progression and time allocation for artists.[96] They develop and deliver strategies to maximise employee engagement, as well as manage artist performance reviews, training and project schedules to support career development. They work closely with the HR Department to maximise outcomes in hiring and crew retention strategies and processes. Roles in this department are people oriented. Strong communication and people management skills are essential.

Personal attributes that are needed to succeed in this role include:

- A passion for working with artists to develop their skills and support their career progression
- Creative and motivated
- Resilient and happy to receive feedback
- Excellent listener and observer
- Good with time management and solo work
- Enjoys physical activity

[95] From industry consultation with Mark Flanagan, L&D Manager, Animal Logic, 2023.
[96] Ibid

Artist Management Coordinator

The Artist Management Coordinator supports the overall Artist Management team to deliver on the department's strategy and objectives. They perform general administrative, data analytics, reporting and coordination duties including managing systems and tracking projects.

Personal attributes that are needed to succeed in this role include:

- A passion for working with artists to develop their skills and support their career progression
- Creative and motivated
- Resilient and happy to receive feedback
- Excellent listener and observer
- Good with time management and solo work
- Enjoys physical activity

10/ DEPARTMENTS NOT COVERED IN THIS DOCUMENT

The following roles are less commonly available in Australia and descriptions have not been provided. However, a number of roles already outlined in this document have transferable skills into these roles. The roles listed below are industry credits listed by the Visual Effects Society.

ANIMATRONICS

- Animatronics Control Systems Designer
- Animatronics Coordinator
- Animatronics Designer
- Animatronics Foam Latex Technician
- Animatronics Hair/Fur Technician
- Animatronics Mechanical Supervisor
- Animatronics Mold/Mould Makers
- Animatronics Sculptor
- Animatronics Seamstress
- Animatronics Supervisor
- Animatronics Technician

MINIATURES

- Assistant Scenic Artist
- Chief Modelmaker
- Chief Scenic Artist
- Creature Supervisor (Practical)
- Creature Tech (Practical)
- Graphic Artist
- Mechanical Engineer
- Miniatures 1st Assistant Camera
- Miniatures 2nd Assistant Camera
- Miniatures Camera Loader
- Miniatures Camera Operator
- Miniatures Coordinator
- Miniatures Director of Photography
- Miniatures Effects Supervisor
- Miniatures Gaffer
- Miniatures Producer
- Miniatures Production Manager
- Miniatures Sculptor
- Miniatures Senior Camera Operator
- Miniatures Stagehand
- Miniatures Supervisor
- Miniatures Technical Apprentice
- Modelmaker (see Art Department roles)
- Modelshop Supervisor
- Scenic Artist
- Senior Creature Tech
- Senior Modelmaker
- Senior Painter
- Senior Plasterer
- Supervising Mechanical Engineer

STOP MOTION ANIMATION

- Head Stop Motion Animator
- Stop Motion Animator
- Stop Motion Armature Engineer
- Stop Motion Assistant Animator
- Stop Motion Assistant Camera
- Stop Motion Camera Manager
- Stop Motion Camera Operator
- Stop Motion Character Fabricator
- Stop Motion Junior Puppet Wrangler
- Stop Motion Lead Armature Engineer
- Stop Motion Lead Model Rigger
- Stop Motion Lead Mold/Mould Maker
- Stop Motion Lead Sculptor
- Stop Motion Model Rigger
- Stop Motion Mold/Mould Maker
- Stop Motion Puppet Coordinator
- Stop Motion Puppet Wrangler
- Stop Motion Sculptor

SECTION 4/ LINKS TO INDUSTRY GUILDS AND CAREER RESOURCES

INTERNATIONAL PEAK INDUSTRY BODIES (VFX, ANIMATION & VP)

Visual Effects Society	https://www.vesglobal.org
The Animation Guild (US only)	https://animationguild.org
ACM SIGGRAPH	https://www.siggraph.org

AUSTRALIAN SCREEN INDUSTRY GUILDS

Australian Directors' Guild	https://www.adg.org.au
Australian Cinematography Society	https://cinematographer.org.au
Australian Guild of Screen Composers	https://agsc.org.au
Australian Production Design Guild	https://apdg.org.au
Australian Screen Editors	https://www.screeneditors.com.au
Australian Screen Sound Guild	https://assg.org.au
Australian Writers' Guild	https://www.awg.com.au
Screen Producers Australia	https://www.screenproducers.org.au

AUSTRALIAN SCREEN AGENCIES

Screen Australia	https://www.screenaustralia.gov.au
Screen Canberra	https://screencanberra.com.au
Screen New South Wales	https://www.screen.nsw.gov.au
Screen Queensland	https://screenqueensland.com.au
Screen Tasmania	https://www.screen.tas.gov.au
Screen Territory	https://screenterritory.nt.gov.au
Screenwest	https://www.screenwest.com.au
South Australian Film Corporation	https://www.safilm.com.au
VicScreen	https://vicscreen.vic.gov.au

AUSTRALIAN NATIONAL TRAINING INSTITUTIONS

Australian Film Television & Radio School (AFTRS)	https://www.aftrs.edu.au
National Institute of Dramatic Art (NIDA)	https://www.nida.edu.au

OTHER INDUSTRY RESOURCES

AFI Australian Film Institute Australian Academy of Cinema and Television Arts AACTA	https://www.aacta.org/membership/aacta-professional/
Arts Law	https://www.artslaw.com.au
Ausfilm International Inc.	https://www.ausfilm.com.au/
Careers In Screen (Screen Ireland)	https://www.careersinscreen.ie/
Fís Éireann (Screen Ireland): Competency Framework Crew 2022	https://www.screenireland.ie/skills/competency-framework-crew
Get In the Door (ILM)	https://gitd.lucasfilm.com/
Media Entertainment and Arts Alliance Motion Picture Production Agreement (MPPA)	https://www.meaa.org/
ScreenSkills (BFI): Career Maps	https://www.screenskills.com/starting-your-career/career-maps/
ScreenSkills (BFI): Job Profiles	https://www.screenskills.com/job-profiles
StoryFutures Virtual Production Skills Report 2023	https://www.storyfutures.com/resources/storyfutures-academy-virtual-production-skills-report-1
Unreal Engine Virtual Production Field Guide 1 (2019)	https://www.unrealengine.com/vpfieldguide
Unreal Engine Virtual Production Field Guide 2 (2021)	https://www.unrealengine.com/en-US/blog/volume-2-of-the-virtual-production-field-guide-now-available
Visual Effects Society: Industry Titles	https://www.vesglobal.org/ves-titles

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We would like to thank and acknowledge the generous contributions to this document from Ausfilm members Animal Logic, Flying Bark Productions and Rising Sun Pictures, as well as from industry professionals Mark Flanagan, Krista Jordan and Nathan Bazley. This document was compiled by Susan Danta, Workforce Capacity Strategy Executive, Ausfilm International Inc.

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