

# Launch your career in 3d modeling

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Your guide to getting started in  
the film and games industry

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**cg**spectrum

# CARVE OUT YOUR CAREER IN **3D MODELING!**

From clay to pixels, modeling is one of humanity's longest-surviving crafts! Recent technologies and techniques such as 3D printing, LiDAR scanning, and procedural workflows have propelled 3D modeling forward in accuracy and scope.

With entertainment and technology veering towards augmented and virtual reality, and an increase in streaming services, the need for experienced 3D modelers will only rise.

This guide is to make sure you're prepared for the many 3D modeling opportunities that lie ahead. Learn more about this field, discover different jobs, get career tips from pros, and more!

***“3D modeling is a rewarding career where you get to bring concepts and ideas to life, sculpting personality and story into characters, objects, and environments. Our role is vital to so many films and games—shaping worlds and the heroes and villains who traverse them.”***

**Bryan Bentley, CG Spectrum Department Head of 3D Modeling**



# ABOUT CG SPECTRUM

## ***TRAINING THE NEXT WAVE OF DIGITAL ARTISTS FOR FILM AND GAMES***

CG Spectrum is a global top-ranked training provider offering specialized programs in animation, virtual production, game development, VFX, and digital painting since 2011.

We inspire and train creators through personalized mentorship from industry professionals, small class sizes, and a unique online learning model that supports different learning styles.

We're an Unreal Authorized Training Center, Unreal Academic Partner, Unreal Connector, SideFX Certified Training Provider, and Toon Boom Authorized Training Center delivering programs worldwide.

### ***SOME OF THE STUDIOS THAT HAVE HIRED OUR GRADS:***

**BLACK KITE**



**FRAMESTORE**



**FRONTIER**



**parallel  
domain**

**PIXAR**

**playwind**

**ROOM8** *studio*



**theia**

# WHAT IS 3D MODELING?



3D modelers digitally build, sculpt, and detail 3D characters, props, vehicles, and sets, often referred to as assets, using computer software and a tablet. Along with a brief and/or concept art, 3D modelers commonly also receive scans from the live-action shoot or third-party sites (like MegaScans) to use as a base for their model.

Not only must a model meet all artistic requirements, but it must also be highly functional and able to work with other departments and their tools. They can be rigged, then animated by a 3D animator, placed as a stationary object in a scene by a layout artist, simulated or destroyed by an FX artist, and used for shadows or holdouts by lighting artists.

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***“As a 3D artist, I believe we need to constantly keep up with the latest tools and techniques since they evolve and change more frequently than previously. Accepting and learning new ways are always challenging, but it is very important not to stay in your comfort zone when there are better and faster ways to create assets.”***

**Hong Chan Lim, Principal/Lead Character Artist at Blizzard Entertainment and CG Spectrum 3D Modeling Mentor**

# HOW MODELS ARE USED

Assets are used in almost every step of the visual effects and games pipelines and do much more than just populate a scene.



## PREVISUALIZATION ▲

3D modelers create low-polygon models and digital environments, working with production (live-action, VFX, and animation) to set up camera angles and block out complex scenes. With the growth of virtual production, 3D modelers are increasingly required during a film's pre-production and production stages.

*Above—previsualization for the series The Mandalorian by previs studio The Third Floor*

## PROTOTYPING ►

3D modelers create low-polygon models and representations of game environments, working with game developers to set up and block out levels of a game.



*Above—environment by CG Spectrum student Kai Moosmann with prototype (top) and final render (bottom)*





## CHARACTER DEVELOPMENT

Correctly scaled and proportioned 3D models of characters (human or otherwise) are required for riggers and animators to bring them to life and are usually how players move through a video game. The look and functionality of a 3D model will inform how an animator (or player) can and will animate it.

*Above—fan art development of the character Alomon from Battle Chasers: Nightwar by CG Spectrum student Benjamin Oman*

## WORLD BUILDING

In video games and trading card games, 3D modelers and environment artists are responsible for the final look and feel of the world/s of a game. World building contributes to the journey of its characters and helps immerse players in a game's story. In film, 3D environment artists digitally extend live-action sets, assisting with realism and immersion.

*Right—world building of a virtual set, Forgotten Crypts, by CG Spectrum grad Marcus Colello*

## REALISM

3D modelers create 'holdout' geometry, which is not visible in the final render, used by departments such as matchmove, lighting, and FX, to generate more seamless integrations between CG and live-action components. It assists with things like shadows and reflections.

## SIMULATION AND DESTRUCTION

FX artists often require 3D assets to create their simulations and effects. These models must be made in a certain way, specific for FX. For example, when building a house that FX will make collapse, all the components need to be water-tight (i.e., no holes or gaps between the modular pieces that make up the complete house model).

## MERCHANDISE (PHYSICAL PRODUCTION)

Film and game character figurines and toys often start as digital models, meaning you may have a 3D modeler to thank for your baby Yoda figurine.



# **JOBS** IN 3D MODELING



***JUNIOR: \$52,500 USD***

***MID-LEVEL: \$75,946 USD***

***SENIOR: \$114,000 USD***

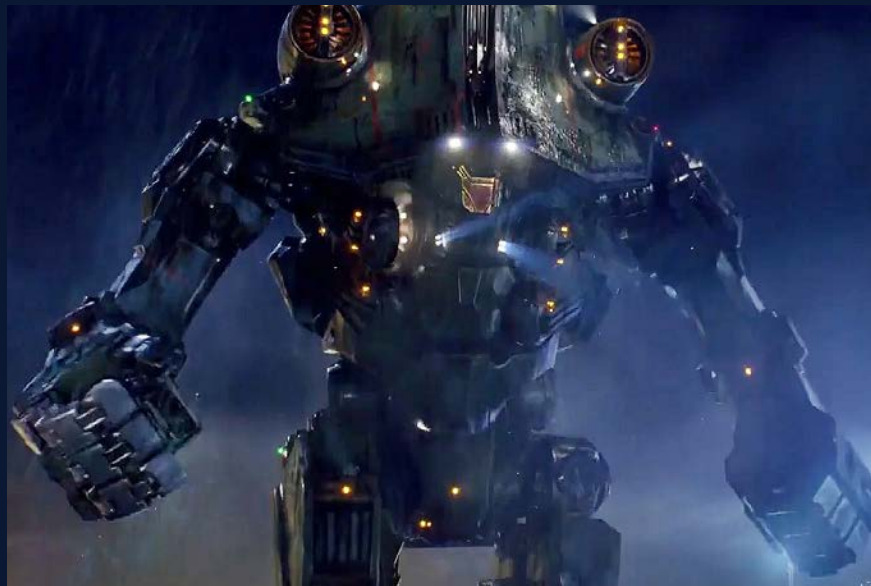
\*Zippia

Below are some of the diverse and rewarding career paths in 3D modeling.

## ***3D MODELER (FILM & GAMES)***

Working from concept art, real-world reference, and scans, modelers help make a film or game more dynamic, adding personality and emotion to its characters, constructing the overall realism of the story (even if done so stylistically), and assisting with world building.

*Right—robot Cernoblog Alpha for the film Pacific Rim by CG Spectrum 3D Modeling Mentor Bryan Bentley*



## ***TEXTURE ARTIST***

A texture artist recreates realistic or fantastical textures or surfaces for 3D characters or objects such as skin, flesh, textiles, armor, fur, hair, scales, metallic finishes, nails, claws, membranes, etc., which are then passed on to a look development artist.

*Left—texture work on Decepticon Warrior Blitzwing by CG Spectrum 3D Modeling Mentor Chun Chun Yang for the film Bumblebee*





## **ENVIRONMENT ARTIST** ▲

Environment artists create and lay out (set-dress) digital 3D environments that form the world of a film or video—from compiling an entire set to scattering tiny rocks. Game environments must function according to the laws of physics and abide by the rules of the game universe.

*Above—an environment from the film Thor: Ragnarok to which CG Spectrum 3D Modeling Mentor Pierre Debras contributed to as part of the team at Framestore London*

## **LOOK DEVELOPMENT ARTIST**

Look development artists put the finishing touches on textures to align them with a film or game's aesthetics. They balance the processes of texturing, lighting, and rendering to establish an asset's look (wet, dry, in daylight, at night, etc.) and match reference images so as to be seamlessly integrated with live-action footage.

***“As a junior artist, you may receive a task that feels insignificant in relation to the “big picture”—step back and consider the universe your object exists within; you’ll find unique ways to apply those rules and external influences.”***

**Carl Shedd, Co-Founder and World Director of Ruckus Games, and CG Spectrum Mentor**



## **CHARACTER ARTIST** ▶

Character artists transform concept art or scans/photogrammetry of live-action actors (known as digital doubles) into 3D models with anatomical limbs and a framework that can be rigged. These elements must fit seamlessly into the footage to make the final product believable.

*Right—Sombra character modeled by CG Spectrum  
3D Modeling Mentor Hong Chan Lim for the Overwatch  
game franchise*

## **LAYOUT ARTIST**

A 3D layout artist helps establish the virtual cameras for each shot—perspective and point of view, angle, depth, scale, framing, and movement. They may also lay out and move around 3D sets and props and do rough character blocking, making 3D modelers aware of which assets are in frame and which ones must ‘hold up’ in resolution (if it sits close to camera).

## **PROCEDURAL 3D ARTIST**

Using a program like Houdini, Blender, or Bifrost for Maya, procedural 3D artists use parameters to dictate a model or texture, rather than manual user input, speeding up workflows. The ability to quickly generate multiple natural elements like leaves, feathers, scales, and hair without looking like they’ve simply been duplicated is highly sought after in film and games.



## **PRODUCT DESIGN (COMMERICAL INDUSTRIES)**

The manufacturing industry often requires 3D modelers for product design, aspects of engineering, and concept rendering. This includes the physical production of toys and collectible figurines.

## **ARCHITECTURE (COMMERICAL INDUSTRIES)**

3D modelers can be used to render interiors and exteriors of proposed buildings and environments for the architecture industry.

# 7 THINGS TO CONSIDER WHEN MODELING

3D models are used in almost every department in film and games, so a modeling artist must ensure their assets move down the pipeline as seamlessly as possible. When creating 3D models, ask these questions:

1. Is it named correctly? Most studios have specific naming conventions.
2. Is it optimized? Heavy assets slow down a scene and take longer to load.
3. Have you created collisions correctly?
4. Are your white masks appropriately created?
5. Can your asset be used 'straight out of the box'? Does it allow for hue shifts and value adjustments so the asset slots seamlessly within an artist's scene?
6. Have you provided a beauty render and turntable so artists know what your asset should actually look like?
7. For sets or larger assets—can they be broken down for easier ingestion? If necessary, include a written breakdown of parts.



***“Make sure that your base mesh is built well and captures the idea of the concept because everything else is built on that. If you want your asset to look good, you need to build a good foundation.”***

**Chun Chun Yang, Senior Texture Artist and CG Spectrum 3D Modeling Mentor**



# GET A JOB IN 3D MODELING

Increase your chances of getting hired with these strategies for success.

## DOWNLOAD SOFTWARE

Try free 3D modeling programs like **Blender**, **ZBrushCoreMini**, or **Houdini Apprentice**. Otherwise, Autodesk Maya (industry standard) offers a free trial.

## BUILD SKILLS

Build the skills companies are listing on job sites. For more support, enroll in a reputable course. CG Spectrum's courses include mentorship from 3D modeling pros and an industry-led curriculum.

## WATCH TRENDS

Online tutorials, webinars, and events can help keep your skills fresh. See resources page.

## NETWORK

Networking is vital. Familiarize yourself with the industry and build your community. Interact online and in real life with industry pros who might offer advice, insights, or job opportunities.

## INTERN

Internships at VFX or game studios can help you **break into the industry**. It's one way to gain hands-on experience, network, and experience studio life.

## SELL ASSETS

Create and sell assets on Unreal Engine Marketplace or similar to gain exposure, get feedback, demonstrate skills to potential employers and collaborators, and make money!

## COLLABORATE

Know a rigger or animator who'd like to bring your model to life? Collaborating with peers is fun and can produce polished work for your reel.

## JOIN CONTESTS

Practice your skills and create assets for your reel by participating in contests and challenges on sites like **The Rookies**, **ArtStation**, and **3Dtotal**.

## SPECIALIZE

Start building more of the assets you want to get hired to create—hard surface, organic, environments, creatures, characters, etc.

## SHARE WORK

Social media is great for showcasing work, building an audience, having your work shared by others, and seen by potential clients and collaborators. See **resources page** for more.

# DEMO REEL TIPS

Your demo reel should show you understand anatomy, proportion, and scale and how to translate this into the digital 3D space. Focus on making your work polished. Here are more tips:



Tailor your reel to the studio and role you're applying for



Include scale reference to show your model is at the correct scale



Where possible, show your model moving (e.g., via a turntable or rigged animation)



If textured, render your model under different lighting conditions



Use Vimeo for best video quality, plus you can update your video



Embed your reel on a platform (like ArtStation) with high-res stills of your model's best angles



No studio experience: keep your reel < 1 min.  
1-2 years experience: < 2 mins



Work in progress is fine, but only include your best models



Ensure music doesn't distract from your work



Double-check for errors; then check again



Get feedback from at least 3 mentors or industry pros before finalizing



Include reference footage, breakdowns, and credits where relevant



Specify if your model is for animation, VFX, or games (each has different requirements)



Share your reel on your website, ArtStation, LinkedIn, and other social channels



Include any production experience



# 6 SKILLS 3D MODELERS NEED

Outside of learning 3D modeling software and techniques, CG Spectrum's mentors of the **3D modeling courses** suggest the following:



Master your knowledge of proportion, anatomy, and linear perspective



Gain a good foundation in art



Maintain at least a basic understanding of animation and animation rigs



Learn the basics of real-world lighting and cinematography



Grasp the fundamentals of composition and photography



Recognize traditional film and game production pipelines

***“Let your artwork, dedication and work ethics do the talking. Don’t be afraid to make mistakes, don’t be afraid to ask.”***

**Chris Flynn, Senior 3D Lead Artist at Dekogon Studios and CG Spectrum 3D Modeling Mentor**



**3D MODELER & MENTOR BRYAN BENTLEY TALKS FILM & THE FUTURE OF VFX**

**Read about Bryan's journey and the exciting future of VFX**

# FREE RESOURCES

Additional resources to help you get started as a 3D modeler for film and games:

- Read [What is 3D modeling?](#)
- Recommended [reading list for 3D artists](#) by CG Spectrum Mentor Bryan Mentor
- Check out [Altruism Digital's](#) YouTube channel
- Watch [How to sell your assets on Unreal Marketplace](#)
- Download free assets on sites like [Unreal Engine Marketplace](#), [RenderCrate](#), [MegaScans](#), [AbientCG](#), [Sketchfab](#), and [TurboSquid](#) and see how other people build their models
- Use Anatomy for Sculptors' free [3D écorché reference tool](#)
- Join the Autodesk [community](#) and check out all their [forums](#)
- Blender also has a bunch of great [communities](#) you can join
- Explore [ArtStation's](#) and [3Dtotal's](#) free modeling tutorials
- Reference the [glossary of 3D terms](#)
- Visit the official [Maya](#), [ZBrush](#), and [Houdini](#) learning channels on YouTube

***“A 3D modeler’s job requires an adaptive attitude where your boundaries will be pushed. That’s not to say learning in a fast-paced environment is easy and stress-free, however learning from industry veterans is, in my opinion, the best way to progress as a professional.”***

Stephen Clark, Key Asset Artist at MPC and CG Spectrum 3D modeling grad



# READY TO START YOUR **CAREER?**

While there are lots of resources available to help you learn the tools and techniques of 3D modeling, it can often be hard to find the most up-to-date and useful information and get professional feedback on your work.

Fast track your career with personalized high-end training from industry professionals. CG Spectrum offers specialized career training and mentorship from 170+ entertainment industry experts to get you job-ready sooner.

## **LEARN FROM INDUSTRY PROS LIKE THESE:**



### **BRYAN BENTLEY**

**Dept. Head, 3D Modeling**  
*The Golden Compass, Pacific Rim, Transformers 2 & 3*



### **FIONA WONG**

**Mentor of 3D Modeling**  
*Thor: Love and Thunder, The Shape of Water, Fast & Furious*



### **HONG CHAN LIM**

**Mentor of 3D Modeling**  
*Overwatch 2, Godzilla: Unleashed, Superman Returns*



### **HAMZA JAVED**

**Mentor of 3D Modeling**  
*Spider-Man: Far From Home, Captain Marvel, Thor: Ragnarok*



### **PIERRE DEBRAS**

**Mentor of 3D Modeling**  
*Arcane, Blade Runner 2049, Star Trek: Discovery*



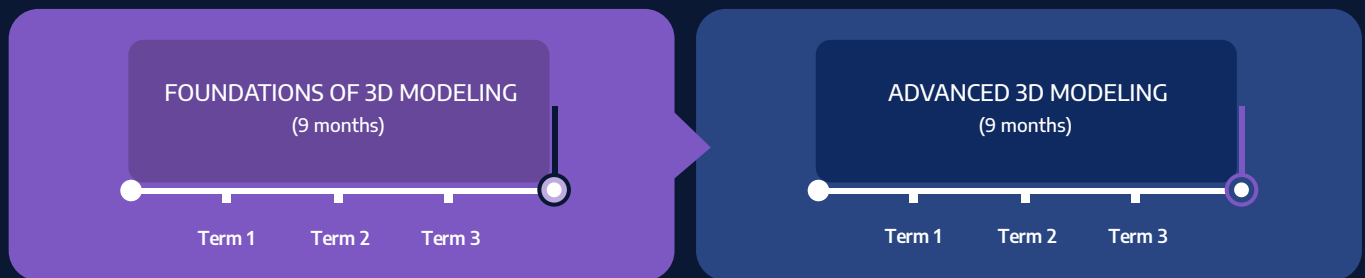
### **IRENE MATAR**

**Mentor of 3D Modeling**  
*Ralph Breaks the Internet, Moana, Big Hero 6, Frozen*

# OUR 3D MODELING COURSES

Get help landing your dream job with CG Spectrum's career-focused training and industry mentorship. Students receive a Certificate of Completion at the end of each course.

## ***PATHWAY 1 (BEST VALUE!)***



## ***PATHWAY 2***



# BENEFITS OF STUDYING AT **CG SPECTRUM**



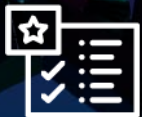
## **INDUSTRY MENTORS**

Learn directly from experts who have worked on major films and games.



## **FLEXIBLE SCHEDULING**

Plan your studies around your work and family commitments.



## **JOB-READY SKILLS**

Build practical and relevant job skills that studios are hiring for.



## **PAYMENT PLANS**

Pursue your passion and start working sooner with flexible payments.



## **CAREER DEVELOPMENT**

Personalized support, portfolio and CV reviews, and interview prep.



## **VIBRANT ONLINE COMMUNITY**

Join our supportive community of students, alumni and mentors from all over the world.



# STUDENT SUCCESS

**STEPHANIE S**

**PIXAR**

**“If you’re looking to make a jump into the creative industry, I could not recommend this more!”**

Every mentor and staff member has been hands-on and directly involved in my learning. Co-Directors of top box office movies and supervisors of major Netflix TV shows are giving me feedback on my projects. Students also have access to a strong community and an awesome career development class to prepare you for your dream job.”

**PIETRO T**

**ROOM8** *studio*

**“One of the best learning experiences of my life.**

In less than a year, I was able to achieve results I could never imagine!”

**MICHELLE V**

**PIXAR**

**“I’ve just accepted an internship role at Pixar!**

I’ve learned so much over the past year and am thrilled to have the skills now to make a career change for my dream job. I’m excited to begin this new phase of my journey—thanks so much, CG Spectrum!”

**ANDI E**



**FRAMESTORE**

**“I got a job offer at a major feature film studio before even graduating!”**

Studying at CG Spectrum gave me the opportunity to network with industry artists while I was learning, and, coupled with the amazing course, I was able to secure a position in the industry. Now I’m working on amazing projects in my dream job!”

**MARIO**



**“The CG Spectrum team supported me in getting a job.**

They reviewed my portfolio and gave me advice, even after I finished the course. I ended up getting a job at a very diverse company in Japan. They told me my portfolio was different from what they usually see from Japanese applicants!”



**CHECK OUT THESE EPISODES OF THE CG SPECTRUM PODCAST WITH 3D MODELERS WORKING IN THE INDUSTRY!**

**From film to games with Chun Chun Yang**

**Leadership and goal setting with David Cunningham**

# YOUR FUTURE IN 3D MODELING AWAITS!

🖱️ Explore courses and apply at  
[cgspectrum.com](https://cgspectrum.com)

***“It is important to know what you are passionate about and start to define some short-term and long-term goals for your career that truly matter to you. Make time to work on it every day and find examples that help inspire you to get started.”***

Fiona Wong, Lead Environment Artist at Method Studios and CG Spectrum 3D Modeling Mentor



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Student work: Gareth Reid