# THE
# CG
# TIME
# SAVER
## GUIDE

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# Begin With Areas Of CG

To begin this guide, here is an overview of the different areas that you can work in as a CG Artist.  Keep in mind, some places like generalists (can do it all) vs. specialists (rock stars of their craft). Some industries are more specialist oriented, while others are less so. Knowing these will give you insight into which paths might interest you.

## Feature Film

This is the sexiest and most sought after field of both 2D and 3D animation. This is the "names in the credits" and IMDB bragging rights section. This includes both feature animation and blockbuster visual effects. While sexy, it's also one of the most segmented areas of animation. This is the land of the specialist, like character animators, character effects artists (fire, scales, smoke, clothing, feathers, etc…), riggers (they set up the models to be animated), lighters, modelers, environmental fx, roto and paint, shader writers, pipeline technical directors (computer science grads who write tools for the artists), texture artists, and a host of others.

Each discipline requires you to be one of the best in the industry, unless there is a crazy crunch going on around certain films, then you might get in with slightly less skill.

## Broadcast and Streaming Television

This is very similar to film but with much shorter turn around times. In addition, you could get by being a generalist here as sometimes the schedules are so short that you can end up doing everything on your shots. (depending on logistics.)

Like film, there are both 2D and 3D applications. Animated shows like Family Guy rely on 2D flat techniques and are produced as episodes whereas visual effects can create anything from painting out wires and coffee cups left on tables in shots, to entire monsters. There is a whole spread of choices and applications for animators and artists here, and many career paths within those applications.

depending on 2D vs. 3D.) This is a sexy place as well, with bragging rights. The other benefit of TV is that you can do more work in a shorter time and have a show reel much quicker than in feature films, where the turn-around time is longer.

## Video Games

In the last 30 or so years, video games have gotten HUGE. In some respects, it's every bit as sexy as feature film and TV. Like film, the turn-around time on games is longer, and in many cases, longer than film as lots of artists might get to work early in the game as opposed to crunch "post" time.

This industry is also segmented like Feature Film. There are teams of artists including modelers, texture artists, character and prop animators, lighters, fx artists, riggers, and a host of support staff.

## Commercial Advertising

This industry, arguably, has the shortest turn-around time of any application of animation, and is often a pressure cooker. Ad agencies live on pressure and often like to exert it on anyone within range.

That said, you can do some real cutting edge work and have a show reel really quickly in this industry. It's worth playing in that arena for a little while to get really, really good, really really fast. Of course, not every ad agency is neurotic, and you have some good ones, but know that it's a pressure cooker going in.

Oftentimes, the ad agencies outsource the work to the same visual effects facilities that produce vfx for film and TV. They often have separate departments for film, TV, and commercial work. You can do 2D, 3D, hybrid, and play to many specialties, although turnaround time and the size of the facility may have you wearing many hats. Being a STRONG generalist may have its advantages here.

# Augmented Reality and Virtual Reality

AR and VR are a new field. Much of this falls under the video game model at the moment, with many generalists working in the field. It helps to know game engines like Unity or Unreal, and a bit of scripting like C# as well. You can be purely artistic in this field, but being so new and tech driven, it helps to know your math or coding a bit as well.

# Architecture

This field is in flux and suffered a bit when the great recession hit. Housing and development took a nose dive, and architecture with it. That said, it's made a comeback, and there is work. It helps to know how to read blueprints and create assets to scale. It's a bit less technical than AR and VR, but the you'll most likely be a generalist unless you land at one of the larger visualization agencies.

The work here can be steady or not depending on the residential and commercial real estate markets.

# Medical and Scientific

This is an emerging field and can be very lucrative. New medicine, treatments, scientific discoveries, and breakthroughs all need to be explained. You can be a generalist in this field, and it's not as regimented as other fields. It's certainly not as sexy as film, but you could actually help save lives here, and that can be worth more than an ego trip.

# Legal

There is a growing need for animation in accident reconstruction and general litigation. You can be a generalist in this field, and if you're good at networking, can even form your own freelance business here. It's not as large as the others, but there is a need, and you might not ever even need to wear a suit, maybe.

## Industrial

This is a hidden gem. Aerospace is huge here. Some of the largest defense contractors have animation in house. Someone needs to animate fighter jets and weapons systems, and defend the "free world." This industry also has a hard time getting artists to work there due to the perception of their "right wing" political stance. This is largely a misconception as these companies employ very diverse work forces, especially lately. They deadlines are more relaxed here as well, and the hours are good for family life.

## Teaching

Teaching is its own reward. Once you get a degree and some experience, you can often find work teaching. Most of this is part-time lately, as far too many professors are not getting tenure positions, and some are freeway fliers working at multiple campuses to make ends meet.

## Internet and Your Own Content

This is one of the best opportunities for anyone in the field. Creating and owning your own content is way better long-term than working for anyone else. Especially with global wage pressure pushing animation salaries down, this is a great way to not only support yourself, but leave behind a legacy. It's also the hardest of them all to pull off. Look at Lucas the Spider.

# Learning Paths

Now that you may have an idea of all of the different areas of animation that can exist, you'll want to know where to begin. This is the crucial and often most stressed question I ever get when people ask how to learn animation. "Do I go to school or learn on my own?" I'll go into the pros and cons of each below.

## Self-Taught vs. School for Animation

I am largely self-taught (some classes sprinkled in, nothing formal in this field. I have a Masters Degree in an unrelated field.) I'm also one of the few that I work with who went that route, and it's been a long one. That said, it's been rewarding, as I take pride in the discipline that learning animation on my own has taught me.

If you go the self-taught route, there are now so many different learning tools available, from YouTube and Vimeo on the free side (like others, I don't recommend these for pure beginners) to Pluralsight, Lynda, and Gnomon Workshop on the paid side. There are also numerous books and websites available to help you on your journey.

The pros of this route are that you can save a whole lot of money as animation schools can be VERY expensive and the earnings you get may take you a while to pay off the loan. The self-learner route will leave you without the mountain of debt that you'd acquire in school. You can also get around having to spend time on core courses that will get in your way and impede your progress.

You will also learn to laser focus while learning (if you can do that,) and will be able to cut out a reel much quicker than 2 or 4 years spent in school learning this stuff. That can fast-track your way into animation for yourself or opening your own business doing it. You will be able to spend time getting clients over worrying about homework while wracking up an insane debt load. You will really have to work your tail off here and somehow be able to critique your work compared to others. It's all too easy to fall into a bubble where you are not getting quality feedback and learning bad habits, or just thinking you are good when in reality, your stuff isn't there yet.

Conversely, the school route can really teach you in an environment where you have access to instructors and other students. These are people who can open doors for you and get you into studios that you'd have a hard time even getting a call back from if you send out your own resumes and reels. Additionally, if you attend a good school, your instructor may have worked at large studios and have a professional eye. Their critiques can be invaluable and can help you learn good animation from bad. These two things make school worth it IF you want to get hired as opposed to creating your own stuff, or you want to learn how to get that professional look. This is where school can pay off. The best schools often have placement and can get you interviews as well. It can make things easier for you.

One personal example is when I interviewed with Blizzard and their "World of Warcraft" team. I'd taken a one week class at Gnomon in Hollywood and they had gotten me an interview with Blizzard. That's the power of school.

Both ways have advantages and disadvantages, and can be a tough decision. I often tell people that animation is a life-long learning field. Technology drives it (even in 2D and stop motion,) and even if you go to school for it right now, you'll most likely need to continue your education as tools and tech changes. It won't be formal school, but you'll always feel the pressure to "keep up."

Ultimately, the decision is on you and your personal situation. If you can afford to go to school, or don't mind taking out massive loans for the average $60K to $150K (experience and technical ability) range annual salaries in high cost of living cities (where most of the studios are,) than by all means, get into a good school and learn all you can while networking and getting invaluable critiques.

If, on the other hand, you want to form your own studio or learn so that you can create your own shows online, like on YouTube, you might do better with the solo self-learner track. Keep in mind that you can also use social media to network. If you have skills in this area, you won't need formal school for this at all, but be open to constructive criticism.

*ONE CAVEAT*

While at the time of this writing, you don't need a degree to work in this field (especially if you have experience and a solid show reel, in many places, that is changing. As more and more small studios are acquired by larger corporate studios, HR requirements are asking for degrees more and more. It may get to

the point where you will need a degree to even be considered for an interview (we are not there yet). This appears to be the way things are moving, so just be aware of that in making any decision.

# How To Get Faster and Better In Much Less Time

## How to Become a Character Animator

Maybe this is why you downloaded this in the first place? This is the rock-star of animation. This is where you get your name in the credits. It's also incredibly difficult to break into, but if you become really good, your competition falls dramatically.

The best and fastest way to learn character animation is probably to enroll in Animation Mentor. I have no affiliate relationship with them, but it's a solid program. I've known many who have gone through it and come out with amazingly solid skill in a pretty short time.

If you don't want to go that route, you can begin with a free program like Blender and either learn Grease Pencil or download a working rig from blendswap, find a get this [book](#), and practice practice practice.

Don't become bogged down with all the cool stuff the software can do. If you want to be a character animator, ONLY FOCUS IN BRINGING A CHARACTER TO LIFE in a believable way. [Learn the 12 principles of animation](#) and get critiques by the most professional people you can find. The internet makes this somewhat easier, just don't stalk people and be polite! No one likes nasty trolls, especially experts over the age of 35. Leave your "meme" and "lulz" culture in the gutter where it belongs and you'll go far.

## How to Become a VFX Artist

Visual Effects seem to be one of the sexiest parts of movies. From aliens blowing up the planet and earthquakes bringing down cities, to giant robots fighting things out in space, visual effects (vfx) fill theater seats. This is the "name in the credits" role, and the one with the most bragging rights outside of being a director or producer.

That said, there are many disciplines in this industry. You could be a generalist, texture artist, lighting artist, technical director, compositor (one of the most common disciplines), rigger, environmental artist, modeler, character animator, fx animator, character effects artist, rotoscope artist, matchmover, etc…

Below are some of the more common disciplines spelled out in this industry. For this type of work, learning Houdini on the 3D side and Nuke on the 2D side would be wise, at the time of this writing (2020.)

# How to Become a Compositor

Compositing, or comp, is a cornerstone of visual effects work. Since so much of the work is centered on integrating live action "plates" with cgi, the compositors job is essential to the integration of all the elements that make a well executed visual effects shot. This is often the last stop before the frames are passed on to the vfx editor for finaling.

Good compositing is a skill learned in the trenches. If you want to go this route, you can begin learning with software like Digital Fusion or Blender, or go the more common paid route with After Effects or Nuke (very expensive f.r a beginner, but used almost everywhere.) More important than software though, is a keen eye for lighting and photography.

You need to know how to integrate cgi into real photography, so understanding the latter can really help. Things in photography like exposure, depth of field, motion blur, grain, lighting, and a hot of other things can help you be the best compositor you can be.

You'll most likely start off in rotoscoping. This is a good place to learn the workflow as you'll be separating images and cutting out parts to hand off to the compositors. Things like cutting out people, wires, coffee cups left on set, mics, etc…

A great place to start is a program like Photoshop. Try matching two different images together and make it seamless. This will teach you a whole world of things that will strengthen your portfolio and skill set. Cut out part of one image and do everything you can to make it match inside another image. You'll learn what can and can't be combined convincingly.

# How to Become a CG Generalist

If you want to become a cg generalist, you need to get pretty darn good at lots of things. This is a very exciting job as you'll be doing everything, but it's also very demanding, and plays better to small studios. Large studios mostly hire specialists who are the best at their given discipline.

A good place to start with becoming a cg generalist is to get good at 2D and move into 3D. Get as good as you can in programs like Photoshop and develop your eye. Then move into the 3rd dimension in a program like Blender. There are lots of Blender generalist tutorials on this site and on the blenderbinge channel on YouTube, in addition to many others.

Give yourself a whole lot of time. This is a lifelong learning study. Start simple and move on from there, and keep a level head about it. You are trying to learn everything and get to a point where your work is stellar. This is a difficult task. Don't beat yourself up.

# How to Become an FX Technical Director (TD)

Being a TD can be a very fun and financially rewarding career. This is the job where you bring down cities and do the large destruction shots. It's also where you can do small scale effects like fire and smoke, and couch hits, splatters, squibs, etc…

This is a demanding job and you should probably begin learning Houdini. It also helps to really brush up on your math skills like linear algebra and trigonometry. While I've seen TDs who say they don't use math, it certainly helps as FX can be very technical in nature, especially because you're dealing with physics, even if they are calculated by the computer.

The cool thing with this job is that you can deal with fire, smoke, cloth, rigid and soft-body dynamics, feathers, crowds, lightning, sand, and water. It can be the money shot type stuff, and the more technical and artistic you are, the more you can do, and the better you can become. You'll DEFINITELY want to learn Houdini for this type of work going forward.

# How to Become a Texture Artist

Texturing is a very artistic discipline where you are painting and applying texture maps and procedural images to models. It helps to be really good with Photoshop and Substance, and have a keen eye for detail. You'll need to understand the technical side of UV mapping and unwrapping geometry as well. Lately, having a good grasp of procedural texture generation is very helpful.

Being a very artistic discipline, having a strong artistic background can really help. Learn painting and get good. While you don't have to be Picasso, the better you are at creating different styles of 2D art, the better you'll be at applying that art to 3D models in a believable way.

In addition to this, understanding PBR (physically based rendering) shading will help tremendously, as will understanding the basics of physically based rendering in general. A good place to learn this is using Cycles and EEVEE in Blender for free. This will translate directly to learning other renderers like VRay, Arnold, Mantra, Redshift, Octane, and even possibly Hyperion (Disney Feature Animation's in-house renderer.)

# How to Become an Envoriment Artist

Building environments can be very rewarding. You can work in animation as a layout artist, in video games as a level artist, or use your skills to build virtual worlds for VR and AR.

You'll want a good skill set that includes painting or photography. Additionally, you'll want to be a strong modeler and sculptor, so focus your energy there. Getting traditional skills really helps at every level, even if you've been in the industry a while.

You can learn the craft from many places, but if you want to fast track your skills, I wrote an article here that you might get something out of. I go over what you need to do for 3D environment creation and recommend a great paid resource that I own and love personally.

# How to Learn Animation Regardless of Your Path

One thing that will speed your progress above all else is practice. Whether you go to the best school or are alone on your computer late at night, you'll only get good if you practice what you learn. Take your time and allow your mind to build the necessary pathways as you practice your craft. This is true for any discipline you choose.

Start small and give yourself some goals. Begin with creating simple projects. As you go through creating these simple projects, you'll begin to compile a wealth of knowledge to draw from for more complex tasks. There is nothing too small, and even the most complex shots can be broken down into small, simple tasks.

The fastest way to progress is to focus on what area you want to work in.  If you don't know right now, that's ok.  You can try this little exercise to help you figure it out, and keep in mind that this is not locked in.  You can, and most likely will, change directions multiple times in your career in CG.

Find a quiet place and close your eyes.  Imagine what you see yourself doing in the perfect career.  What are you working on?  Are you working for yourself or helping build something you love?  Are you in a small office or a large company with lots of different teams?  Are you doing everything on a project, or just focusing on one part?  Where are you working?  What city?  Close to home or far away?  Are you wearing a suit, business casual, or a t-shirt and shorts?  What subject matter does your work deal with? (entertainment, legal, engineering, architectural, video games, AR/VR, tech, medicine…)

Make a mental note of these things and write them down.  That will give you a great starting point and place to focus your energy.  You can then use the information in this guide to help steer you in a direction that you will focus in, and get better at a much faster rate than jumping from one topic to the next.  This list will change over time but it's a solid start.  Don't skip this, even if you are seasoned.

# Big List of CG Software

## What Software Should I Learn?

This article will dissect the top animation software by 2D vs. 3D. We will also discuss the primary uses of the software and how it relates to certain styles like 3D animation, 2D animation, motion graphics, sculpting, and all around content creation. There is quite a bit of overlap so we will do our best to call it out when we see it.

## Best 3D Animation Software by Industry Usage

[Autodesk Maya](#)

Operating System: Windows, OSX, Linux

This software gets the first spot here because it's used almost everywhere in the Animation and VFX industries, in addition to many industrial shops as well. It's an older piece of software that is updated and supported regularly by Autodesk, Inc. It is the primary piece of 3D animation software taught in schools, and one you should know if you want to work anywhere in the industry, whether you love it or not.

[Autodesk 3D Studio Max](#)

Operating System: Windows, OSX, Linux

3D Studio Max has been around for a very long time and is very close in user base to Maya. It features one of the most robust set of tools for creating any type of 3D animation you can imagine. Over the years it has taken hold in video games and architecture, and would be worth learning if you want to work in those industries. It's also taught in schools all over the world, and has a very mature plug-in base.

### SideFX Houdini

Operating System: Windows, OSX, Linux

This is one software platform that can't be ignored. If you want to work in visual effects for film, tv, or games, learning this software would be a very wise choice. It's user base is growing, and as Autodesk and Adobe have been gobbling up market share, SideFX has been providing a nice alternative, and an almost all-in-one pipeline in a box.

This software has a longer learning curve than most due to its procedural nature. It's completely node based, and gives you access to raw data that other applications don't very easily. This makes it great for large scale hero shots in film and makes setting up systems to create lots and lots of procedural geometry possible.

In my opinion, this is the future of paid 3D content creation.


### Cinema 4D

Operating System: Windows, OSX, Linux

This software is used extensively in motion graphics and commercials. It has a procedural engine that is easier to use, if not quite as robust as Houdini, but allows for some really easy and cool effects in a layer-based approach that is more intuitive from the start than Houdini. It also has incredible integration with Adobe After Effects and is a solid and highly used and mature production tool.


### Lightwave3D

Operating System: Windows, OSX, Linux

I started doing professional work in this software, and it will always have a place in my tool set. The renderer is amazing, and you've seen work produced in this software for years on TV and at the theaters. The work on Star Trek Voyager and Enterprise used Lightwave very heavily, as did Avatar. While not as wide an install

base as Autodesk, this is one piece of software that is proven and amazing in its own right.

## Blender

Operating System: Windows, OSX. Linux

Blender has been one of those pieces of software that has been around and always in the background. That is rapidly changing with the latest release. You can now see this open-source software being installed as a supportive tool in more and more studios, and in some, the primary content creation tool. Look for work on Man in the High Castle, and more to come. This software is undergoing tremendous development and growth, and will earn it's place at the table sooner than later. Oh, it's free as well, so yeah, there's that.

## Modo

Operating System: Windows, OSX. Linux

These guys broke off from Newtek years ago and formed their own software. They are now owned by the Foundry, who also owns Nuke and Katana. It's a full featured modeler that has a niche but solid user base. It's a very easy to learn piece of software at a nice price. It has been used on feature film and continues to gain new users. It's worth checking out.

## zBrush

Operating System: Windows, OSX

While not an animation package, this sculpting package is everywhere. If you want to work in content creation, having an understanding zBrush is becoming crucial. This app allows you to create amazing characters, props, scenery, and anything else you can imagine. I can't think of a modern visual effects film where this software was not part of the pipeline somewhere.

# Best 2D Animation Software by Industry Usage

[Toon Boom Harmony](#)

Operating System: Windows, OSX

Assuming that you can draw, most of the industry used [ToonBoom](#) at the time of this writing. ToonBoom is a pretty extensive platform that works well in studios with multiple artists working on shows. Harmony is the version of the software that has a pretty large install base. It would be good to learn this software if you want to go into 2D animation at the moment as it's the big dog on the block.

[Adobe After Effects](#)

Operating System: Windows, OSX

This program is an industry standard, and therefore, if you are entering the industry, you should at least have a cursory understanding of how it works. It's used for a whole lot of things and has a place in 2D animation. There are character tools in it, and while it's not a dedicated 2D animation platform like Toon Boom, it's install base is ubiquitous.

[Adobe Animate](#)

Operating System: Windows, OSX

This was FLASH. Flash was an amazing animation package that existed for the last decade. It began as an animation tool, then became focused on web development. Once the iPhone made Flash useless in its platform, Adobe seems to have made it back into a fierce animation package that still has web development capability as well.

### Adobe Character Animator

Operating System: Windows, OSX

This program is an interesting real-time motion capture program with some other functionalities. It seems to be used primarily with After-Effects. While not a dedicated full featured package for 2D animation like Toon Boom or Animate, it's a great addition to make some repetitive tasks much quicker and more fun.


### TV Paint

Operating System: Windows, OSX, Linux, Android

This software has been around for a very long time (28 years at the time of this writing) and has an install base in animation studios across the world. The tool set is robust and features much of what you'd need to do your own animated content, or work on a team producing longer form and more complicated shows.


### Blender

Operating System: Windows, OSX. Linux

This free program is primarily a 3D content creation program, and a robust one at that, but in the latest 2.8x version boasts a very powerful 2D capability called Grease Pencil. This is one to watch out for as it matures. You can't beat the price tag either.


### Crazy Talk

Operating System: Windows, OSX

This is a fun piece of software that has been growing by leaps and bounds over the last few years. It's workflow has been suited for more Jib-Jab style cutout animation but allows for much more. It's not very expensive and has a pretty solid and growing user base. Worth checking out, especially for your own content or if you do explainer videos like Bestie, etc., or *gulp* corporate stuff.

[Moho](#)

Operating System: Windows, OSX

This was Anime Studio, which boasted a relatively large fan base. It's now called Moho Pro and Moho Debut, and both feature full featured animation tools for 2D work. The pro version allows for more and you can see that comparison on their website.

[Synfig Studio](#)

Operating System: Windows, OSX, Linux

A pretty robust open source dedicated 2D vector animation package. It has many of the tools that you'll find in other software and you can't beat the free price. While smaller in scope and no advertising budget, it's worth checking out if you simply want to create your own content.

[Pencil 2D](#)

Operating System: Windows, OSX, Linux, FreeBSD

This software is free and open source, and works in both vector and raster. It also has the added bonus of working on FreeBSD, if anyone is still using that OS.

# Useful Job Boards for CG People

## List of Good Job Board Sites

AIGA – Old, authentic, and lots of job postings.

Art Jobs – Arts focused site for those interested in theater, museums, etc...

Artstation Jobs – very up-to-the-minute and easy to apply.  Get on Artstation.

Authentic Jobs – Lots of corporate type design and marketing type jobs.

Coroflot – CG friendly and searchable by company and focus.

Creative Heads – Listings seem to hit this later on for some reason but it's solid.

Creative Hotlist – Post your resume and search for a pretty wide variety of jobs.

Creative Pool – Mostly UK

Dribble – Post your work like Artstation and find jobs as well.

Dezeen – A whole lot of architecture and design focus on this one.

Glassdoor – HUGE creative job section.  Great metrics on companies and management.

Indeed - HUGE creative job section.

Krop – Very large and diverse job board.

Monster.com – Very diverse, but why not?

Smashing Magazine Jobs – Large listing and up-to-date.

Talent Zoo – A whole lot of advertising, marketing, graphic design, and 2D, but worth checking out anyway.

# Schools With Good CG Programs

## List of Schools With Good Programs

[Academy of Art University](#) – San Fransisco CA - Certificate, AA, BFA, and MFA

[Art Center](#) – Pasadena CA - BFA, MA, Continuing Education

[Art Institutes](#) – For profit and have been closing campuses.

[CalArts](#) – Santa Clarita, CA - BFA, MFA/MA, DMA

[Fashion Institute of Technology](#) – NYC, NY -  BFA, MFA/MA

[Full Sail University](#)– Winter Park, FL -  BFA, MFA

[Gnomon School of Visual Effects](#) – Hollywood, CA – Certificate, BFA

[New York University Tisch](#) – NYC, NY – BA/BFA, MA/MFA, Continuing Education

[Parsons The New School](#) – NYC, NY - AA, BA/BFA, MA/MFA, Continuing Education

[Pratt Institute](#) – Brooklyn, NY - AA, BA/BFA, MA/MFA, Continuing Education
[Rhode Island School of Design](#) – Providence, RI – BFA, MA/MFA

[SCAD](#) – Savannah, GA - BFA, MA/MFA
[School of Visual Arts](#) – NYC, NY - BA/BFA, MA/MFA, Continuing Education

[Vancouver Film School](#) – Vancouver, BC – Certificate – Get Job

# Good Freelance Gig Sites

## List of Good Freelance Sites

Upwork – This is the current king of the market.  You can find all kinds of jobs on here, but it can get competitive.

Fiverr – The lowball site haha.  You can find quick gigs on here that you can price accordingly.  It's not all $5 but starts there at a fixed bid.

99Designs – Bid with your work against lots of other designers, and shout "pick me, pick me!!"

Freelancer.com – a solid site worth a shot.  Similar to Upwork in many respects.

Awesomeweb - $27/mo gets you a no-bid system.  Can be good for those starting out or breaking out of the corporate gig.

PeoplePerHour – A decent site but prepare to get outbid by lowballers.

TopTal – When you are established, this may be really good for you.

LinkedIn ProFinder – a new entrant, it has the power of LinkedIn behind it.

# Free 3D Model and Texture Sites

## List of Sites with Free 3D Models

3D CAD Browser– Somewhat decent models with many different formats available for download.

3D ContentCentral – Simple and decent, not much there but easy.

3Delicious – Dated site but easy to download mostly free stuff.

3DModelFree.com – Mostly interior and set dressing stuff. Lots of free and easy to download.

3D Resources by NASA – It's NASA.  If you want real space assets… yeah.

3d.si.edu – Smithsonian.  Enough said.

3dsky.org – Many interior type models, some cars, etc… Again, dig through this.

3D Warehouse– great resource but READ their terms of service.

All3dfree.net – Not bad, decent quality, and easy downloads.

ArchibasePlanet.com – Lots of architectural stuff and a whole lot for free without needing to sign in.

Archive 3D – A whole lot of interior and architectural set dressing stuff.

Bentanji – Decent free section.

Blogscopia – Fun models, easy download.

CadNav.com – I use this site a whole lot for freelance. It's a solid repository.

Car Body Design – It seems to be an aggregate site that links out to other free models on other sites.  Worth a look.

CGTrader – Some of these are free. It's worth checking out to see if you can find anything that doesn't charge.

Clara.io – Somewhat decent if you dig through it. There is a lot of low polygon stuff here but check it out.

Craftsmanspace – Decent starters, low poly, but easy to download.

Design Connected – solid set dressing stuff.

DMI Car 3D Models – Cars, cars, and lots of free cars.

Free3D – Some of the ones listed on this HUGE database are free. Some charge. It's overall a good resource.

Free 3D Base – great set dressing. Some low poly but easy to download and workable.

GrabCAD – Most of the models on this site are free. They are in engineering data format, so you may need to find conversion utilities to bring them into art programs.

Hum3D – Hit or miss, but decent stuff.

model+model – Nice clean layout with a free section, so it makes the list.

Oyonale – Set dressing and mostly POV-Ray format. Some others.

Renderpeople – Free section with standing people and animated people.

Sweet Home 3D – Set dressing. Low poly. Worth a look.

Thingiverse – A lot of random models to dig through. There is search functionality and seemingly lots and lots of stuff for free.

VIZPARK – Nice site with a free section among high quality interior paid models.

VWArtclub – Awesome site, nice layout, easy to download.

# List of Sites with Free 3D Textures

At the time of this writing, this site list is pretty solid.  This list is fluid as sites come and go.  For a maintained and always up-to-date list visit:

 https://www.virtualtweakers.com/free-3d-texture-site-list/

3DXO – Very nice site, very easy to use, and a decent selection.

3D Texture  - Mostly 1K resolution for free with a good selection.

3D Textures  - 1K texture resolutions are free.

Environment Textures – Simple site, decent selection, and easy to use.

Free PBR – Nice, easy, quite a few free PBR textures.

Pixabay – HUGE collection of free and CC images to use for reference.  Search for "textures."

Poligon – A good free section on a site that sells high quality PBR materials.

Texturer – Super easy to find and download a wide variety of textures.

Textures – A seriously large collection of free textures.  You need to sign up to download and anything over a certain resolution will require "credits."  It's a bit convoluted but a good site.

# Glossary of CG Terms

## List of Sites with CG Terminology Explained

Wikipedia Glossary of Computer Graphics – Good resource.

Hobart and William Smith Colleges (David J. Eck) – Great list.

University of Edinburgh Glossary of CG Terms – Excellent List.

TimAxMedia – Long and Comprehensive List

Buffer Article on Design Terminology – Useful for CG Adjacent Terms

ThoughtCo Mathematical Terms – Useful for understanding math terminology.

Glossary of Computer Programming – More techy but super useful.

ComputerHope Programming Terminology – Understand tech terminology.

Coding Jargon – More tech stuff in an easy table format for reading.

# Conclusion

This guide is ever expanding online as well.  You are now on the mailing list (which is hopefully how you received this guide, as it's not available to the general public, but if not, here's the link:

https://www.virtualtweakers.com/signup/

I'd recommend using this information as a spring-board in your own career.  This is a career that can pay off if you put in the work.  It's a skill-set that you can use to feed yourself and your family for the foreseeable future.  3D is still in its infancy stage and will grow exponentially as things like virtual reality and augmented reality really begin to take off globally.

There is no scarcity, only opportunity for the bold.  Be the bold.

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**YouTube BlenderBinge Channel**

https://www.youtube.com/channel/UCrXMyWVRmiXdMTpxxCsPuCQ