



Computer Graphics—Catch the Wave of the Digital Future!

Computer Graphics jobs are one of today's fastest expanding career opportunities, as more and more businesses use dazzling special effects, informative animated interfaces, and sophisticated video games to attract eyeballs and sell their products. Without the skills of thousands of computer graphics professionals, animators, artists, designers, and programmers, much of modern entertainment and information technology would grind to a halt and the Internet as we know it wouldn't even exist. As new ways to use computer graphics continue to grow at a phenomenal rate, the demand for skilled technicians trained in these areas is also growing.



The exploding field of computer graphics is changing entertainment, science, business, and the arts. Are you ready to catch the wave?

You can't escape it—computer imagery is everywhere. Whether

it's on TV as part of news and entertainment programming, on the big screen in special effects-filled Hollywood blockbusters, or on your desktop as part of the latest hit video games, computer graphics jobs are creating an explosion of new careers on the digital frontier. But how do you get to be part of the coming wave? What types of computer graphics jobs are out there, and what do you need to score one? Never fear; we'll tell you what your options are and the best ways to break into a great job in the computer graphics field.

Where Computer Is the King

In today's market, computer graphics jobs cover a lot of ground. Not only are there many businesses that need computer graphics, but even within those careers are specializations galore. Let's start with a look at the most common areas where computer graphics jobs can be found:

- **Video games:** Considered to be the crème de crème of the computer graphics world, video games are also on the cutting edge of the profession. Video games require the most advanced programming and the most creative ideas—most of the computer graphics we see today were originally developed for the video game industry.
- **Science and Industry:** Computer graphics are a huge part of modern science. From digital models of environments, to graphics that define complex scientific processes, computer graphics are at the center of new devices and technologies. There are even computer graphics applications in the field of medical science, with complex 3D modeling of the body and computer simulations of treatments and surgical procedures.
- **Movie & Television Production:** TV and movies are second only to video games in the use of creative and bleeding edge computer graphics technology. On film, computer graphics are used to generate special effects; car crashes, super powers; alien invasions—imagery that only a few years ago would have been too expensive or downright impossible to produce can be fully generated inside the virtual world. And even when computer graphics aren't being employed to create amazing effects, they're part of the logos, chyrons (that band of text at the bottom of a news screen), informational animations and other visual effects used in almost every TV show.
- **Digital Animation:** Industry giants like Pixar and Dreamworks have revolutionized the animation industry, using computer graphics skills to create entire digital worlds. Today's digital programs, whether for on-air cartoons or major films, have changed the face of animation even more than they have changed the Hollywood blockbuster.
- **Internet Advertising and Online Production:** As commerce expands over the web, there's a need for computer graphics workers to create websites, online games, visual effects, and many other high quality visual productions.
- **Computer Software:** While video games are the glamorous side of the computer industry, computer graphics jobs are also an important part of productivity software. Whether they're used to design interfaces for important programs, create informative and useful ways to convey information, or as part of a computer simulation, graphics are a key element of today's computer industry.



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The Jobs

So now you know where the jobs are. But what kind of jobs are there? Computer graphics jobs typically break up into five major areas:

- Computer Animators give motion to 3 dimensional objects. They must understand how to give these objects realistic qualities of weight and movement.
- Computer modelers create realistic three-dimensional models of objects, people, and places.
- Texture artists create the surfaces of modeled objects, giving them qualities of light, texture, and reflectivity.
- Graphics Programmers design the programming “tools” needed to manipulate computer imagery. They also provide support for existing software and computers.
- Computer artists specialize in building two dimensional pictures, backdrops, and graphics (logos, images, 2D art).

What’s the Job Like?

As a rule, computer graphics jobs take place in clean, well-lit, air-conditioned office buildings. Work cubicles and conference rooms are where most of the action takes place, and long meetings where elements of a project are thrashed out are standard. Hours are often long, with 10-14hour days stretching over weeks when a deadline looms. You’ll be working with some of the most powerful non-scientific computers in the world, because computer graphics is both memory and processor intensive stuff. But if you thrive on pressure, like to work in a fun and committed team atmosphere, and relish playing with big, expensive computers, the long hours are definitely worth it.

Qualifications

A career in computer graphics requires a great deal of specialized knowledge. A high school diploma is a minimum, with special emphasis on math, physics, or other hard sciences needed as a base. In addition, you’ll need extra training to use the tools of a computer artist—complex graphics and animation programs such as Alias Power Animator, Maya, 3DStudio Max, SoftImage or Lightwave are the industry

standards you will need experience with. In addition, basic familiarity with computer programming languages such as C++ or Python is a must. Although you can try to teach yourself, these skills are best learned through college or technical school training programs where both computers and software tools are readily available. There are also specialized computer graphics schools where you can pick up the skills you need, such as DigiPen in Seattle or Full Sail in Florida. Training should include more than just how to use the tools; a deep understanding of art, graphic design and art theory are also critical. If you plan to work in the animation side of the industry, the ability to tell a story through a visual medium is also important. Finally, it’s important to make friends in the computer graphics industry; these are people you’ll be working with, and they’ll often provide leads for jobs or tips on how to make your work better.

When looking for work, you will need a portfolio of projects. These can be projects developed during an internship, or through your own freelance work. Portfolios for animation or modeling should include video and demo reels of moving models.

Salaries

Starting salaries for computer graphics jobs average around \$25,000 per year, with a median of around \$43,980 yearly for experienced professionals. Top end salaries range around \$85,000 yearly for the highest paid workers. Computer artists in the film, TV, and video game industries tend to range about 10% higher than base due to the high demand for skilled personnel.

Employment Outlook

Although competition is high due to the computer graphics industry’s “cool” appeal, demand is also growing, so that new positions in the field are constantly opening. Demand is also increasing faster than the national job average as new applications using computer graphics (concerts, art exhibitions, sports events, theme parks) come into play. Jobs are still centered in the major media markets of New York, Los Angeles, San Francisco, and Chicago; although there are also regional hot spots like Vancouver B.C. and Seattle, WA (home of Microsoft, Nintendo and many other small development houses).



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Conclusion

If you're looking for a great career in the very edge of technology, a computer graphics job is a good place to start. If you're ready to master programming skills, digital creation

tools and the basics of art and scripting, the sky is the limit. And with computer graphics becoming a greater and greater force in today's modern world, you'll find lots of places where your talents can find a home on the digital frontier.

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