

Appendix

Getting a Job in 3D Graphics

If you are already working in the industry, then you know that your performance at the companies where you've worked and the people who you have worked with are most important to moving ahead and getting your next job. If you are a student or are trying to break into the industry for the first time, however, your first priority is to develop a showreel to demonstrate your skills.

A Lighting Showreel

A *showreel* (also called a *demo reel*) is a short video that features your best work related to the job you are applying for. To demonstrate your skills in lighting, use your showreel to highlight that you can integrate elements into a live-action environment and also that you can light fully CG environments.

Originality is important in your work. Develop something original, unique, or personal to make your showreel more memorable. Scenes that are copies of famous movies make your showreel seem worse by comparison, and make you look less creative as an artist. When you work professionally, the subject matter of your scenes is usually determined by a client or director, so while you are a student or hobbyist, seize the opportunity to create something unique that you really care about.

Credits

Along with your showreel, you should provide companies with a breakdown sheet that lists which shots or projects are included in the reel, where or for what client or project you created them, and exactly what you were responsible for on each shot. If you did everything involved in creating a shot, then say that and mention which software you used.

There's nothing wrong with using premade models or collaborating with others in a group project. If you worked on a shot and only did lighting, rendering, or one of the other positions, then say exactly what you did to contribute to the shot. When you decide to join a group project, you need to be sure that the work will end up looking better than anything you could

have done by yourself. In most cases, having a good team of people working in specific areas such as modeling and animation can greatly speed your work and allow you to focus on quality lighting and rendering. However, at some schools, group projects may be done on limited schedules or without an adequate merit-based selection of people to work in each position; the result is projects that don't look as good as what a talented individual could have produced by herself.

You can also add brief informative titles before each shot or project on your reel; these should contain pertinent information about what you did and what software was used.

Be careful about putting any pertinent information on the soundtrack of your showreel. At many companies, lighting showreels are viewed with the volume turned down or all the way off, so voiceover narration may go unheard.

The most important credit to put on your work is your own. Be sure to put your name and contact information on each piece of your application, including your résumé, your reel, the cover to your reel, and the breakdown sheet. When the human resources department loans out your reel to people in relevant departments for review, there is always a chance that materials will be lost or separated, so put your contact information on everything.

Quality over Quantity

Your first concern in making a professional showreel is creating professional-quality work. If you are deciding between a short 15-second project and a long 2-minute project, consider how much more professional and polished you can make the shorter project.

As a student, while you are still learning the software and trying techniques for the first time, naturally projects will take you longer than they would if you were more experienced. Your first goal should be to learn professional-level skills and techniques—practicing them at a higher speed will come later.

There are already enough bad computer graphics projects in the world. Showing an employer a bad showreel with the excuse that you made it all very quickly is not likely to get you a job. Depending on how experienced you are, showreels that run fewer than 2 minutes are generally fine for

students; experienced professionals can usually benefit from keeping their showreels down to 2 or 3 minutes as well.

If you're not sure whether any particular shot belongs on your reel, the first rule of editing is "if in doubt, leave it out."

Starting Strong

Many employers watch only the first 15 or 20 seconds of a showreel if it doesn't demonstrate the quality they are seeking. If you put your best work first, it makes people more likely to continue watching all the way through.

Many companies will watch your showreel online, but it's a good idea to also have it on DVD. If you send your reel on DVD, and also mention the URL to view your reel online in your résumé, then you are giving someone at the company two ways to view your reel. Not everyone has a Blu-ray player, and some Blu-ray players have trouble playing home-burned Blu-rays, so you are better off posting a high-definition version of your reel online and sending out a plain old DVD through the mail.

If you deliver your showreel on DVD, be sure that it starts playing your best work right away, without any menus, lengthy title sequences, or other delays. If you have some reason to include a menu on a DVD, put it at the end of the showreel instead of the beginning.

Do I Need to Specialize?

Many people create 3D animation and visual effects by themselves, doing the work of all of the departments described in this chapter. Several figures in this chapter featured images from the short film *The Green Ruby Pumpkin*, created by Miguel Ortega and Tran Ma. They are experienced visual effects artists who have worked within larger production pipelines, but for their own film, they did work from all stages of the production pipeline, along with a little help from some friends. It is also common at small companies for a small team of just a few people to complete projects, with some employees doing animation and others doing all the modeling, shading, lighting, and compositing work.

As a general statement, larger studios need to be more structured and are usually divided into more departments than smaller companies. Even at larger studios, however, people who have more than one talent—such as

those who can do modeling, rigging, and effects as well as lighting—can be more valuable as long-term employees, because they can move to different departments as needed.

At a larger studio, you have to choose (or are assigned to) a position that you will perform in the pipeline. If you enjoy the creative process of creating 3D scenes as a whole, are looking for a job that has lots of variety instead of one where you do the same thing every day, and feel reluctant to specialize into any of the departments, you may prefer to work in smaller companies where individuals do a more flexible range of tasks.

When you start out as a student, try to experience the entire process of creating an animated 3D scene, from design to compositing. Working through projects by yourself is the best way to learn, and even if you specialize more later on, the experience will make you more conversant with people in other departments. Many of the 3D artists who have specialized positions in a large studio have worked in other jobs previously in which they were less specialized and have a level of understanding of the entire production process.

The advantage of specializing is that it gives you the opportunity to focus on and achieve excellence in a craft. Most character animators, for example, seem happy to live with character animation as a full-time job. Week after week they practice animating different shots, have their work critiqued, solve problems, refine their work, and learn new techniques. To stop and spend time with a modeling, lighting, or software issue seems like a distraction to many character animators—not a welcomed departure.

If there is one fixed requirement in getting a job, it is that you should do at least one thing at a professional level. If you can do more than one thing, that's fine, but until you can achieve excellence in at least one area, you won't be able to make an impressive showreel.

Technical Directors

Many job descriptions use the common job title *Technical Director (TD)*. Some companies use this title for a range of different jobs in different departments:

- Lighting TDs (the most popular use of the term) light and render 3D scenes.

- Character TDs are responsible for rigging a character with a skeleton, clothing, hair, and deformation controls.
- Shading TDs write and adjust shaders to determine the appearance of models and prepare objects to be painted by the texture painters.

At some companies, TDs do modeling in earlier stages of a production, and later are involved in compositing and effects animation. Some companies even have *pipeline TDs* involved in developing the architecture that links all of the departments together.

Don't take the words "technical" or "director" too literally. Being a TD doesn't mean that you have an entirely technical position, nor does it make you the director of anything. Most TDs are really artists in the production pipeline doing portions of the creative work that happen to also require some computer skills. TD positions require a balance of artistic sensibility, technical savvy, a good eye, and good problem-solving skills. Almost all TDs are able to work with different operating systems, including being proficient in common Unix shell commands. Many know how to write scripts in different scripting languages, such as Python, Perl, MEL, or Tcl. Some TDs are programmers, but most are not. Among the TDs who have scripting or programming skills, most spend their time working on specific characters or shots and doing scripting or programming only when they need to speed up their work or solve a production problem.

Internal Promotion

Computer graphics production companies rely heavily on internal promotion to fill many positions. When a position becomes available, the first choice of most managers is to hire from within the company. As a second choice, previous freelancers may be called. Searching through a box of showreels and trying to hire someone new is actually a last choice and becomes necessary only when a company needs to replace people or is growing.

For the production company, it makes a lot of sense to hire and promote from within. They can get employees whom they already know and who know the pipeline, and it gives incentive to entry-level employees to know that they might get promoted to a more creative position on a future film.

In most cases, studios allow workers to practice and learn new software and skills on their own time to help improve their chances of moving into another job.

This means that if you apply to a studio wanting to be a lighting TD, but they offer you a position in rotoscoping or match move instead, then the entry-level job might not be a bad place to start. By studying the work of people whose department you want to join, learning the software, and demonstrating skill in the areas you are interested in, you can often move up within a production company.

When companies promote people from within, they also tend to save money. They know how much you were getting paid before they promoted you and that you are likely to take the promotion you have been working toward, even if it is accompanied by only a small raise.

Job Security

When people ask how to achieve job security in computer graphics, the short answer is that there isn't any. Nobody is guaranteed a job that won't go away.

As you know by this point in this book, lighting in computer graphics is an art form requiring creative judgment. You will not be replaced by a machine or have your job as a lighting artist become completely automated. However, technology developments can reduce the number of jobs. Improvements in real-time rendering or real-time previewing of your lighting may let you work on some projects twice as quickly as you do now. If you can get twice as much work done, this means your employer only needs half as big a crew to light a film.

Some companies are better than others at maintaining employees for the long term. Studios that work on longer-term projects try to build a talent pool of more experienced employees, and they try to create a livable environment in which employees will stay and work on several films. But even if you land a job in one of the few studios with a reputation for being a relatively stable long-term employer, you are still likely to be engaged in *at-will employment*, which means that you can be laid off or may choose to resign at any time without violating any contract.

Visual effects studios and companies working on television commercials have work only when they are the winning bid on a project, so inevitably there will be times when they are unusually busy and other times when things are slow. No studio can keep paying employees' salaries for too long when there is no work for them to do and no income coming into the company. Thus a portion of the workforce is often hired on a per-project basis—and, of course, there is always the risk that a wave of layoffs will follow the completion of a big project if there isn't an equally big project starting right after it. The market for animated features is also getting more crowded, with large numbers of animated films competing in theaters every summer, so working on animated films doesn't necessarily provide greater job security than working in visual effects. More than security in any single job, you need to think about *career security*. You must maintain and continually improve your skills, your showreel, your web site, and your connections within the industry. If you have a portfolio to be proud of and are respected by your supervisors and coworkers, then even if your current position ends, you should be able to find new opportunities.

Another key aspect in career security is where you live. If you take a job in a city that has only one or two computer graphics studios, then losing your job means having to move. Living in an area where there is a vibrant industry provides much better career security than being isolated does.

Many countries offer subsidies, tax rebates, or increased access to their domestic theater markets as incentives to movie studios that create visual effects there. A number of visual effects studios in the United States have gone bankrupt as visual effects work has moved to other countries, making jobs more difficult to find in the United States. Be warned, however, that the large Hollywood studios can be fickle customers; if you live in a country that pays them rebates to bring production work to you, that kind of work can leave a country as quickly as it came if another country makes them a more generous offer.

Ultimately, how many jobs are available to you in a particular area depends on your own skill set. If you have strong technical skills, then you may be able to work in other high-tech industries, even if you don't find work in computer graphics. A good education helps you be flexible, as you move between jobs, or as the job market itself changes. Try to push yourself as far

as you can to be both an artist and a scientist; it never hurts a programmer to take drawing classes, nor does it hurt you as an artist to dig deeper into your digital environment.

Your connections to other people, and your work history with other people, are also essential to future job prospects. The hiring process at computer graphics companies is not just a talent contest that judges who is the best artist or programmer. Instead, it's a decision that employees make about whom they want to work with. When deadlines loom, you sometimes spend more time with your coworkers than your family. People who are reliable and pleasant to work with, and who are good at communicating, cooperating and taking direction from others, are the ones who keep getting invited to work on other projects.