Create a career around your talents

Do you enjoy using the math skills, spatial relationship abilities and communication savvy needed for game programming or simulation? Today’s simulation and game programming professionals work in a wide variety of situations, from teams of as many as 100 people working on projects that cost millions of dollars to independent contractors working on individual projects. With the right education, you could work for the military, an educational institution or an airline, creating simulation environments to train their employees. Or, you could use your knowledge to help an entertainment giant build console and online games for players worldwide. You could even work in the insurance industry or for a safety or transportation agency reconstructing accidents to help determine their causes.

Let nothing stand in the way of pursuing a career in simulation and game programming

New opportunities emerge every day in this field. Consider these statistics reported from respected sources:

- **Demand for computer software engineers** will increase as computer networking continues to grow. For example, expanding Internet technologies have spurred demand for computer software engineers who can develop Internet, intranet, and World Wide Web applications. Employment of computer software engineers and computer programmers is projected to **increase by 21 percent from 2008 to 2018**, much faster than the average for all occupations.¹

- **By 2018**, the Bureau of Labor Statistics is estimating that **careers in software development will rise by 29%**. This bodes well for **video game software programmers and the developers** that work along side them.²

- **Programmers** continue to be one of the **highest paid talent** in both the **console and online game industry**.³

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DeVry University can help you turn your talents into a career

If you enjoy building and programming the logic that makes games challenging and simulations vital, you can turn your talents into a career of your dreams. We can help you build on your natural abilities, understand new and emerging technologies firsthand, and develop the knowledge and skills you need to succeed. With the right education, you can be prepared to pursue these fast-growing careers.

**Artificial Intelligence Programmers** write code to develop the logic a game or simulation program uses to carry out a large number of actions. From making computer-controlled characters act realistically, to developing sets of rules to dictate how characters react to the player, artificial intelligence programming is one of the most challenging aspects of game programming.

**Engine Programmers** control how graphics are stored and reproduced by the computer. They ensure that objects within the game interact realistically with one another and delete extraneous pieces of art that slow down loading times. They have excellent programming skills and are familiar with a wide variety of game development software.

**Game Programmers** map out and write code for video game software programs. They work to improve the processing time of games while adding functionality and increasing playability. By defining how things move within the game’s world, they help ensure a seamless experience across the game.

**Graphics Programmers** are multimedia artists who design the look of environments and characters within simulations and games. They have a wide range of artistic styles and are comfortable working in the latest graphic design software. They work to perfect the playback of animation across games.

**Interface Designers** create the controls for simulations or games, helping determine where important information will occur on screen without interrupting game play. They have insight into human behavior as it relates to motion, and great spatial relationship skills.

**Interface Programmers** take the designs of the interface designer and makes them functional. They build the databases that keep track of things like game points and characters’ lives.

**Lead Designers** have a wide variety of skills, including story and character design, level design, artificial intelligence design, player control, user interface and pacing. They manage teams of designers and developers to create the final product. Leadership and organizational skills are a must.

**Lead Programmers** head up teams of developers as they create a game or simulation. They bring together the work of other programmers in building a final product. Interpersonal and leadership skills are important for these individuals, as is programming proficiency.

**Lead Testers** oversee the hundreds of quality assurance factors, as well as usability and beta tests that are performed on games before they ever hit the market. Attention to detail and high standards are a must.

**Level Designers** create the increasingly difficult challenges a game player must overcome in order to beat the game. They write code to address different game scenarios, such as multiplayer play. They have knowledge of commercial 3D and 2D design programs and may also build their own level editors to help handle complex game play.

**Level Programmers** write code to address different game scenarios dreamed up by designers. They have knowledge of commercial 3D and 2D level design programs, multiple programming languages, commercial and proprietary game engines, and may also build their own level editors to help handle complex application requirements.

**Playability, Usability and Beta Testers** test early versions of simulations and games to ensure that they are meeting designer goals while providing an enjoyable and/or educational experience. They make recommendations for improvements. These professionals are extremely detail-oriented and can remove themselves from the experience of playing the game to spot the smallest of problems.

**Production, Quality Assurance and Regression Testers** help find bugs and glitches in game or simulation programs. They make suggestions for improving game speed and timing and help ensure that the multiple areas of large games come together in a seamless final product.

**Quality Assurance Applications Programmers** execute test plans and document their findings on the applications that make games and simulations run. They analyze and resolve system failures and help implement changes to prevent future glitches. They are detail-oriented with excellent documentation skills.

**Simulation Programmers** design and develop core simulation components such as AI, physics, character control, visualization systems, shaders and FX. They have strong math and science aptitudes; are exceptional at problem solving, debugging, and troubleshooting; software and have a broad knowledge of programming tools.

**Tool Programmers** put their coding expertise into practice. They write software for artists, designers and sound designers to use within the development studio to convert art, sound and game play into data that will work in the games they develop. In addition, they create tools to help developers edit their work and see how it will look when the games are finished.
Resources

Make an educated decision about your career. You can learn more about the careers we’ve featured by visiting these websites.

American Society for Engineering Education  
www.asee.org

Association for Computing Machinery (ACM)  
www.acm.org

Association of Information Technology Professionals  
www.aitp.org

Gamastura  
www.gamasutra.com

Gamejobs.com  
www.gamejobs.com

Game Developer Research  
www.gamedevresearch.com

Game Zone  
www.gamezone.com

Tech America  
www.techamerica.org

IEEE Computer Society  
www.computer.org

National Workforce Center for Emerging Technologies  
www.nwcet.org

Software & Information Industry Association  
www.sii.a.net

Bureau of Labor Statistics  
www.bls.gov

Salary Information  
www.salary.com

Websites current at time of publication.
Earn an education

that can work

for a lifetime

We can help you every step of the way at DeVry University

At DeVry University, you can find what you need to succeed – flexible schedules, personal attention, hands-on learning and professors with real, practical experience. Plus, you can obtain the ongoing support you need to pursue a career path in technology, that’s right for you.

You can explore the leading trends in computer programming that can give you an edge in your career. And you can develop the critical business skills that can help you succeed in many business environments. Our career-focused learning can prepare you with the knowledge and skills that employers are looking for – and an education they respect. Coursework in our bachelor’s degree programs culminates with the completion of a Senior Project, which addresses real business needs.

As a student, you can learn important problem-solving techniques and project management skills needed for a successful career. And you can build a professional portfolio that can help you in your job search. When you land your dream career, you can be prepared with the skills and experience you need to jump right into your new role.

A DeVry University diploma also means you can earn a degree from an institution that is accredited by The Higher Learning Commission of the North Central Association (ncahlc.org), a significant mark of institutional quality and integrity.
Begin your path to a successful career at DeVry University

DeVry University offers a variety of degree programs* and specializations to help start you on the right path to a successful career in simulation and game programming.

**Game & Simulation Programming Bachelor’s Degree Program**
Dive deep into the world of game and simulation programming and you can be prepared to map, design, test and debug a wide variety of games and simulations. Learn specialized programming languages used in game design and the art of testing and quality control. You can also explore artificial intelligence and its role in the games and simulations of today and the future.

**Computer Information Systems Bachelor’s Degree Program**
Web Game Programming Specialization
Pursue your passion for gaming and interactive media while learning the multimedia tools and techniques used to create web-based games, dynamic web pages and training applications for consumer electronics and professional development.

**Multimedia Design & Development Bachelor’s Degree Program**
Web Game Programming Specialization
Study how to create dynamic web pages using multimedia tools and techniques, plus learn the design and development of web-based games and how to install, configure and maintain game-server software.

DeVry University and Adobe® Systems Incorporated have partnered to bring the Web Game Programming specialization students innovative learning via Adobe's industry leading design and interactive media software applications. DeVry University's partnership with Adobe Systems Incorporated provides anytime/anywhere accessibility to these software programs, because the power of creativity is more than 9 to 5!

*Program availability varies by location. Some coursework may be available online only. Adobe is a registered trademark of Adobe Systems Incorporated.*
Choose the area of study that’s right for your career goals

Use this quick-reference chart to find which DeVry University degree program and specialization is right for your career choice in the field of simulation and game programming.

<table>
<thead>
<tr>
<th>Careers Opportunities</th>
<th>Game &amp; Simulation Programming</th>
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Want to know the code to a career in simulation and game programming? Visit devry.edu or call 888.DEVRY.04 to learn how you can make it happen.