Hi-Tech Jobs in VIDEO GAMING

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EXPLORING HI-TECH JOBS

Printed in the United States

For more information, contact:
ReferencePoint Press, Inc.
PO Box 27779
San Diego, CA 92198
www.ReferencePointPress.com

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

Names: Currie-McGhee, L. K. (Leanne K.), author.
Title: Hi-tech jobs in video gaming / by Leanne Currie-McGhee.
Description: San Diego, CA : ReferencePoint Press, Inc., 2024. | Series: Exploring hi-tech jobs | Includes bibliographical references and index.
Identifiers: LCCN 2023026587 (print) | LCCN 2023026588 (ebook) | ISBN 9781678207021 (library binding) | ISBN 9781678207038 (ebook)
Subjects: LCSH: Video games--Design--Vocational guidance--Juvenile | Video games--Programming--Vocational guidance--Juvenile literature. | Video games industry--Vocational guidance--Juvenile literature.
Classification: LCC GV1469.3 .C87 2024 (print) | LCC GV1469.3 (ebook) | DDC 794.8--dc23/eng/20230809
LC record available at https://lccn.loc.gov/2023026587
LC ebook record available at https://lccn.loc.gov/2023026588

Contents

Video Game Developer

What Does a Video Game Developer Do?

Catt Small loved gaming as she grew up. She even taught herself how to code to bring some of her own game ideas to life. Following the path of a video game developer as a career has allowed her to maintain her passion as an adult. Small is the developer of *SweetXheart*, a story-driven, single-player game in which the user becomes Kara, a nineteen-year-old Black girl from the Bronx who attends an art college and interns at a tech company. Over five in-game days of going to school and work—as well as interacting with people in Kara's life—players get a feel for the stresses and experiences that a Black woman confronts when struggling to succeed. "There were parts in this game about harassment because being a Black woman in New York City, you experience a fair amount of street harassment. A man actually told me that he was not going to harass women or catcall women anymore after playing the game,"[4] Small explains. Her game is small and runs on a browser, but it has a sizable emotional impact on players and gets them thinking.

A Few Facts

Number of Jobs
About 1.62 million software developers in 2021

Pay
Median annual salary of $74,838

Educational Requirements
Bachelor's degree in video game design or any computer science field preferred

Personal Qualities
Creative, analytical, detail oriented

Work Settings
Indoors, in an office setting

Future Job Outlook
Growth rate of 25 percent through 2031

Get Help Building Your Skills

"There are scholarships, there are lots of programs that usually offer [video game development] lessons for free. I know there's Code Coven, I know Black Voices in Gaming is a thing, I know the Game Devs of Color Expo is a thing. You do not have to go through everything alone. There are communities out there that can help. . . . What matters is your experience and your knowledge working on games. Your portfolio can speak for itself."

—Geneva Heyward, game developer

Quoted in Brianna Scott, "The Number of Black Video Game Developers Is Small, but Strong," NPR, March 20, 2023. www.npr.org.

Video game developers like Small are the ones who turn a clever game idea into a reality. They often see a game through its development, from concept to entering the market. For those at larger companies, developers might only be responsible for specific stages in the production chain. In the beginning, developers can be part of the concept and design phases, generating ideas about what type of game it should be (such as racing, first-person shooter, or survival), the plot of the game, and its overall look and mechanics. This is especially true for small companies or games designed by one individual.

In larger companies, developers are part of a team. Once the production begins, developers are often the liaison between designers and programmers. Developers help ensure the programmers understand and can execute the designers' plans and that the designers understand the capabilities and limitations of the programmers' tools. Video game developers may manage coders or even help code the visual elements, play structure, and other features of the game. Developers often are involved in the testing of the game to ensure it performs well on the different platforms, and they oversee the debugging of any problems. At the

end of the development, they are continually working to resolve any lingering problems with gameplay or performance.

A Typical Workday

For independent developers, those who develop their own games, a workday is filled with many tasks because they oversee all life stages of development. Neil Jones develops and markets his own games, so he is active in each stage. He creates an initial design document detailing the game's mechanics, flow, characters, plot, setting, visuals, and more. Once complete, his days may be divided between creating the art (using software such as Figma for drawing or Maya for animation), importing these designs into a game engine such as Unity or Unreal, and then building the game in the engine. He uses the preset components of the game engine—or might manually code within it—to structure the game. To create a game soundtrack, he might likewise use sounds within the engine and import his own musical score.

As the sole developer, he also must set aside time to analyze the market to sell the game. Jones says:

> You sit down and you code or you do art. In the larger scheme of things . . . developers have to deal with . . . not only sitting down and making the game, making sure the game is fun, but we have to worry about what other games are similar to our game. How can we stand out? How can you market the game? You have to make marketing materials. You have to do the sound effects in music.[5]

Education and Training

The key to becoming a game developer is gaining experience in designing, programming, and testing games. A formal education in game development or a related field will assist in building a game development career. Several game development and publishing companies look for candidates with a bachelor's degree

in computer science or a related field, and more universities are offering game development and design as a major. Companies will also consider a person who has obtained skills through certificate programs. Schools such as the University of Washington, Harvard University, and Full Sail University offer professional certificate programs in game development, which take less than a year to acquire.

Many companies also look at practical experience, especially if you can demonstrate your skills through video games you have solely developed. You must show that you understand and are able to work with popular game engines that provide a framework for game development. Demonstrating programming skills—which are needed to add unique visuals, features, and details to the game—is also helpful. Whether through schooling or practical experience, developers should learn programming in C++ and C# because they will either be coding or overseeing others who are coding in these computer languages.

Skills and Personality

While game developers need technical skills such as programming and game engine knowledge, they must also have the drive to continually learn. There are new technical advancements in game design, up-and-coming program languages, and different gaming platforms that require developers to add to or modify their games. Staying up-to-date with changes in the field and its technology is important in order to ensure that your product will find a place in the market.

Being able to communicate, verbally and in writing, allows a game developer to interact with designers, programmers, testers, and anyone else involved in game development. Since a developer often oversees a portion or even all of game development, these individuals must ensure that team members understand what is needed of them to meet established goals and deadlines. It is also important to communicate success along the way by celebrating milestones in the development process.

Some video game developers work on all the different stages of game development. Others take on more specific tasks, including coding visual elements, play structure, and other features.

To be a game developer, you must be detail oriented. Games need to work without errors, and all aspects, from game logic to the soundtrack, must interact with each other seamlessly. Game developers are often imaginative people; either they are the sole creator or they play a key part in devising the game's primary concept. Creating a video game that is interesting and attractive to players requires the ability to think of unique ideas for its plot, mechanics, and characters.

Working Conditions

For the most part, game developers work at a desk, indoors on their computer, using the latest hardware and software technology. Typically, they have several monitors, headphones, and microphones. Aside from working at the computer, their day might include meetings with designers and programmers if they are part of a team.

Diversity Matters

"It's become incredibly important for me to work at studios that actively strive to include more diverse representation in their character designs and stories. At Amazon Games, I get to directly influence and shape the guiding principles and tenets of my game to ensure that it features authentic stories and inclusive experiences. During my time at Riot Games, I helped run and organize the 'Play like a Woman' initiative, which was an internal event that encouraged Rioters to build empathy by temporarily changing their [avatar] names to be more traditionally feminine facing. We interviewed several female-identifying developers, asking them to share more broadly their gaming experiences."

—Morgan Ling, game developer at Amazon

Morgan Ling, "Life & Work with Morgan Ling," Voyage LA, March 27, 2023. http://voyagela.com.

How busy a person is during the day depends on the stage of a game's development. The closer the deadlines are, the more intense the workload is. "I've also slogged through the 90-hour work weeks trying to get an unreasonable product done in time to meet an unreasonable deadline. Although my stimulant of choice wasn't energy drinks, it was a combination of strong black coffee and speed metal turned up way too loud in my headphones,"[6] explains Jason W. Bay, a veteran in the video gaming field who has worked as a developer.

Bay explains that the work environment within a gaming company is generally fun because the people enjoy interacting and talking about games. The staff members can still get stressed, as Bay mentions, but the office environment usually tolerates playful ways to take breaks. "That's why you're definitely going to find action figures, LEGOs, Nerf guns, remote-controlled drones, and other 'toys for grown-ups' in any game studio you walk into," Bay says. "It's how the relatively well-paid game developers express their interests, and how they blow off steam during crunch time."[7]

Employers and Earnings

Employers of video game developers range from large scale companies such as Activision Blizzard, Nintendo, and Valve Corporation to smaller, independent companies such as Askiisoft and Blendo Games. Also, game developers may freelance and create and sell their own games, although often they will need to work a full- or part-time job separately until they earn enough income from their own games.

According to the 2021 Developer Satisfaction Survey, conducted by the International Game Developers Association, 63 percent of full-time developers reported earning more than $50,000 per year. The job site Glassdoor shows a larger number—$74,838 average base pay—for game developers in the United States as of October 2022. The larger companies often pay much better, and developers who have more experience and take on lead roles in game production can earn six-figure salaries.

Future Outlook

The global gaming industry is bright, with predicted earnings of $321 billion in 2026, up from $235.7 billion in 2022, according to PricewaterhouseCoopers's Global Entertainment & Media Outlook. Given such expectations, all careers in the gaming industry will likely see growth. According to the Bureau of Labor Statistics, the job growth rate for game developers is 25 percent through 2031. If you are interested in using your skills to build a game from start to finish, this is a career to consider.

Find Out More

Game Developer

www.gamedeveloper.com

Game Developer is a leading resource for game development and industry news. The website includes links to its podcast on game development and interviews with those in the field. Additionally, there are blogs by people in the game development field, sharing what they are working on and offering career advice.

Source Notes

Introduction: The Future Is Now

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3. Quoted in Marie Dealessandri, "How to Get a Job as a Programmer," GameIndustry.biz, November 1, 2021. www.gamesindustry.biz.

Video Game Developer

4. Quoted in Brianna Scott, "The Number of Black Video Game Developers Is Small, but Strong," NPR, March 20, 2023. www.npr.org.
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Programmer

8. Quoted in Digital Schoolhouse, *Careers in Video Games: Game Play Programmer (Charles, Ubisoft)—One Minute Mentor*, YouTube, 2020. www.youtube.com/watch?v=rXL0vuW8sHM.
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Interview with a UI/UX Designer

Rachel Geng is a UI/UX designer who has worked as an intern with Facebook and Gamebreaking Studios, and she has created her own game, *Starweave*, in collaboration with a design team. She attended the University of Southern California's Games Program and received a master's degree in game and interactive media design in 2023. The interview was conducted with the author by email on May 29, 2023.

Q: Why did you become a video game UI/UX designer?
A: I grew up drawing and telling stories. I have a great love for the interactive medium of games, and UI/UX ended up being a perfect intersection between my passions for visual art, psychology, and game design. When considering the design of interfaces, there's so much functional utility yet worldbuilding behind each screen; they greatly and subtly affect so very much about the play experience!

Q: Can you describe your typical workday?
A: Video game design is a lot of problem-solving. A typical day involves evaluating the latest issues to tackle, working with teammates to find the best path forward, and then making it so. After charting out new UX flows, drawing new UI assets, and implementing changes into the game engine, we seek out a new problem to solve.

Q: What do you like most about your job?
A: There's always something interesting, and usually a little silly, going on where games are concerned. We're serious game developers, but it's easy to laugh over a funny bug or unique design solution. After all, we're making experiences to entertain others. A great job is full of levity and passion as we, too, strive to make our players laugh and even cry.

Other Jobs in Video Gaming

AI programmer	Quality assurance analyst
Audio composer	Rigger
Backend developer	Server engineer
Cloud architect	Sound designer
Database engineer	Technical support specialist
Game designer	Tester
Level designer	Texture artist
Level programmer	2-D artist
Lighting artist	3-D modeler
Network engineer	UI programmer
Producer	UX designer
Product manager	Writer

Editor's note: The online *Occupational Outlook Handbook* of the US Department of Labor's Bureau of Labor Statistics is an excellent source of information on jobs in hundreds of career fields, including many of those listed here. The *Occupational Outlook Handbook* may be accessed online at www.bls.gov/ooh.

Index

Note: Boldface page numbers indicate illustrations.