CAREERS WITH STEM™

GAME DESIGNER+ DEVELOPER

Insights, information and advice on cool careers in the world of gaming

SUPPORTED BY

QUT

Take game design to the next level.

Pierre Medeiros was excited to study QUT's Bachelor of Games and Interactive Environments. "My enthusiasm for playing games has always fed into a desire to make them."

Pierre chose QUT because he recognised the priority placed on providing industry relevant knowledge, skills and experience. He was looking to learn within a real-world context that led to genuine outcomes.

"Studying at QUT helped me gain a much deeper understanding of the industry I want to work in, and a surprisingly diverse range of sectors looking to apply game theory."

Pierre now has a firm eye on working in game production alongside passionate professionals who are invested in creating meaningful online experiences.

To discover more of Pierre's story and learn about studying game design at QUT, visit our website.

qut.edu.au/study-games

QUT
the university
for the real world

MORE THAN FUN AND GAMES

Gaming tech is so much more than just entertainment, with applications in fields ranging from medicine to defence

On the surface, gaming may seem like a fun activity you take part in online with friends or fellow gamers all over the world, but this fascinating career area goes deeper than that. Defence, medicine and manufacturing all use gaming design and development to enhance their industries. In fact, there are not many fields that don't benefit from the use of 3D-gaming tech. Think: data protection, environmental simulations, text mining, wearable tech… They all start out with a creative idea.

We are a university with technology at the heart of what we do. Our CLEVAR (Cognitive and Learning Environments in Virtual and Augmented Reality) research lab enables gaming-specific learning and the ability for designers and developers to expand their maths and programming skills, along with exploring the culture of gaming and human experience.

QUT now offers the first Diploma in eSports of any university in Australia. Designed to kickstart your Bachelor of Games and Interactive Environments (Games Design) degree, it's an exciting recognition of how IT, creative industries and business all benefit from the right development and design skills.

Computer graphics are a synthesis of beauty formed from traditional mathematical systems. It's truly a fascinating field to study and work in. QUT students get firsthand experience in real-world scenarios, assisting on projects with local VR companies such as Next World

**DR ROSS BROWN
ASSOCIATE PROFESSOR**

Enterprises (construction) and Raytracer (space and defence) to experience industry up close during their degree.

We have exciting things coming in virtual (VR) and augmented reality (AR) to evolve digital environments even further, and the opportunity for employment is growing. For example, game developers who graduate from QUT have gone on to work at places like Amazon. It is interesting, visually oriented work you can adapt to many disciplines.

I was inspired to pursue this career by programming a real-time icosahedron and realising I was creating beauty. That was special enough to keep me interested for the last 28 years. Where will your game design and development passion begin?

Dr Ross Brown, Associate Professor, Faculty of Science, School of Computer Science, QUT

> ## "THERE ARE NOT MANY FIELDS THAT DON'T BENEFIT FROM THE USE OF 3D-GAMING TECH"

Check out CareerswithSTEM.com for more insights, information, inspiration and advice about a game designer and developer career!

Careers with consoles

Controllers at the ready…

If you're streaming *Free Guy* on Disney+ and have 10,000 hours on Steam, this page is for you! You totally appreciate the design and development of gaming, plus all the layers of code it takes to simulate worlds and characters for your playing pleasure. Want to make a career out of it and join the industry that's worth $4 billion dollars in Australia alone? Here are some hot facts you need to know. We'll call it homework for gamers. – *Pippa Duffy*

Skills list

✔ **Scoping**
✔ **Teamwork**
✔ **Creative thinking**
✔ **Time management**
✔ **Problem-solving**
✔ **Eye for detail**
✔ **Critical reasoning**
✔ **Imagination**

and immersive technologies industry, to the point that when

WANNA HEAR IT STRAIGHT FROM A PRO? **DR ROSS BROWN**, ASSOCIATE PROFESSOR AND VR RESEARCHER FROM QUT'S SCHOOL OF COMPUTER SCIENCE, HAS THE LOWDOWN ON THE DIVERSE WORLD OF GAMING DESIGN AND DEVELOPMENT. **BIT.LY/QUTTUBE**

CLICK HERE

SHUTTERSTOCK

EDU-TAINMENT IS HAVING A MOMENT

Sure it's all fun and games (geddit?!) but gaming is playing a huge role in other sectors, too.

From online safety for the 170,000 new users (i.e. kids) clicking on the internet each day, to integration in health, government, security and environmental organisations, design and development in the digital space goes way beyond an online multiplayer session.

- Schools use gaming platforms such as **Studyladder** and **Reading Eggs** to help students with their learning.
- **Duolingo** is reducing the language barrier for 120 million users across 19 dialects.
- The humble **Solitaire** is a game of patience and a brain exercise for people with Alzheimer's disease.

- CSIRO's Human Centric Security Team have integrated **Cyber Circuit,** an 'old-school' style game to test and increase cyber security knowledge for employers.
- **The United Nations Environment Programme** has teamed up with big games like Angry Birds 2 to incorporate things such as climate change into their gaming options.

TRANSLATION STATION

Like many industries, the gaming world has its own lingo. Take note of this list of helpful words and their meanings — but remember, you'll also learn on the job, so you don't need to be an expert to enrol!

Milestone: Each step in the development process is a milestone.

Bugs: Bugs in the gaming world infiltrate programming and create problems that need to be solved by QA testers so we, the people, can play without hitting any probs.

Dev: Literally developer, just abbreviated.

Noob: This is an inexperienced player in a gaming environment. Designers and developers work hard to ensure user experience (UX) and user interface (UI) are premium, by considering IxD (interactive design; see next point) at every turn. So noobs don't stay noobs for long!

IxD: Interactive design is how designers switch from their initial idea and creative vision to thinking about how the user will play their game.

Alpha and Beta: Major stages in gaming design. Alpha refers to the first build of a game, when it's ready for testing. Beta is when it gets to the almost-ready-for-the-public stage and all the bugs are (hopefully) fixed.

Ping: The location of a mark within a gaming simulated world.

VC: Voice chat. Very important in online gaming, so making this seamless in development is a no-brainer.

WELCOME TO THE WORLD OF EDU-TAINMENT!

WITH A DOUBLE DEGREE IN SCIENCE AND GAMES, ANIMATOR AISHA DARMANSJAH IS COMBINING HER LOVE OF THE NATURAL WORLD AND TECH

Aisha Darmansjah is a fan of 2D design, old-school games that educate and entertain, her cat Susu and shaking up study practice. Loving both STEM and humanities, Aisha completed a double degree at QUT — the same uni her parents graduated from ("They're both arts people") and where she now works as a research assistant while completing her Honours in IT.

"I did a Bachelor of Science and a Bachelor of Games and Interactive Environments," Aisha says. "But I'm continuing on with the game side of things for my Honours."

IT wasn't always the path she thought she'd go down — originally, Aisha had dreams of becoming an archaeologist. "I've always had an interest in the connections between humanities and STEM, which led me to look into pursuing archaeology. However, the uni open days opened my eyes to the lack of jobs in this field in Australia. So, instead, I turned to another meeting of disciplines I enjoyed — games."

It was playing one such game that really caught Aisha's attention and she started asking the big questions like, "Why did they design that? What was their thinking putting that in this game?".

"I was playing Pokémon Emerald and, upon arriving in Mossdeep City, I was shocked to notice mangroves growing there," she says. "Growing up near the coast, mangroves were a common occurrence for me in real life, but it was at this point I realised I'd never seen them in a game before. It made me want to know why that was. And so I started paving the way that would eventually lead me to game development. Being a natural sciences nerd, I'm very interested in environments and how they can be represented in games to impart experiences on the player."

Thanks to the opportunity at QUT to combine her love of tech and the natural world, along with the support of her teachers, Aisha was able to double up on her degree and achieve both. "I'm an animator so I do a lot of asset creation, but it means I get to flex my artistic muscles and my science-y thinking muscles, too," she says.

Aisha also rates the relationships you get to form at QUT by working in smaller cohorts. In her project work, she's been able to collaborate and form friendships with programmers and game developers who she needs to make her animations come to life.

Her ultimate bring-to-life job? "To study the mechanisms that make edu-tainment games work and apply that knowledge to get people thinking about the world around them." *— Pippa Duffy*

AISHA DARMANSJAH
ANIMATOR

> **"I GOT TO FLEX MY ARTISTIC MUSCLES AND MY SCIENCE-Y THINKING MUSCLES, TOO"**

A day in the life of a...
QA TESTER

Miles Hatcliff has been obsessed with gaming since he got his very first Xbox as a kid. The fact he now gets paid to do what he loves is a bonus!

A s a QA (quality assurance) tester, Miles Hatcliff is living his dream, working in games development at Gameloft. Having already travelled the world with his QUT student team to compete in the Global VR Hackathon in China, as well as publishing award-nominated game Isle of Ewe on Steam store, Miles soaked up all the opportunities and industry connections along the way to score a job before he even graduated.

Now, with his Bachelor of Games and Interactive Environments, with a major in Games Design and a minor in 3D Animation and Marketing, Miles hopes to eventually move into a 3D artist role and maybe one day open his own studio. — *Pippa Duffy*

MILES HATCLIFF
QA TESTER

This is what a typical day for Miles looks like...

7:30am
Wake up and get ready for work.

8am
Catch public transport to the office in the city.

8:45am
Arrive in the office and head up to the roof to make a coffee and have a bite to eat.

9am
Begin the workday at my desk. Check emails and our work chat (Mattermost) messages. Install the latest build of the game for testing later.

9:15am
QA stand-up meeting. Very brief catch-up on what we did yesterday, what we will be doing today and whether anything is blocking us.

9:30am
Design stand-up meeting. Sit in on the design team's stand-up meeting and take notes.

9:45am
Begin testing the (latest) game we're working on. Log any issues to project-tracking software Jira. If anything insightful came out of the morning meetings, I might have something specific I want to test.

1pm
Lunch time. We normally walk down to a Japanese place near the office and get sushi. Other times, we do a team lunch.

1:30pm
Check to see if there is a new build and re-download it. Review issues marked by devs as completed. This is to check that fixes that happened have worked.

2pm
Investigate any issues that a developer saw. Gather more information and log it to Jira.

3pm
Quick tea break.

3:10pm
Run a test plan to check for any unexpected behaviour. Log any issues found to Jira and mark as "pass" or "fail" on spreadsheet.

6:15pm
Arrive home. Make and eat dinner. Chat to my partner about our days.

8pm
Play some video games or do a little portfolio work before going to sleep around 10pm.

> **I HOPE TO ONE DAY OPEN MY OWN GAMES STUDIO."**

BACHELOR OF GAMES AND INTERACTIVE ENVIRONMENTS (GAMES DESIGN / 3D ANIMATION AND MARKETING), QUT >> **QA TESTER, GAMELOFT**

GAME DESIGNER AND DEVELOPER

Get the job!

Ready to kickstart your future career as a game designer and developer? Begin here…

Pay grade?

You can expect to pocket this kinda cash when employment calls…

Product designer: $52K-$108K
Industrial designer: $48K-$87K
Quality assurance (QA) tester: $49K-$99K
User experience (UX) designer: $58K-$109K
Animator: $44K-$80K
Developer: $49K-$87K
Marketer: $56K-$121K*

*Source: salaries according to payscale.com

STUDY CORNER

Tertiary education is your key to the gaming and creative computer sciences faculties. Where gaming was once a fun thing to do on weekends, career options are now only as limited as your imagination.

QUT offers cool courses like eSports and double degrees with everything from business to science, IT and marketing. Hit up these courses on Open Day to find your fit!

Bachelor of Games and Interactive Environments - major in animation, game design and software tech

Bachelor of Business / Bachelor of Games and Interactive Environments - hone your sales skills once you're done designing your game

Bachelor of Creative Industries - combine with IT or data science degrees for all-round know-how

Diploma in eSports — kickstart your long-term gaming studies or flex your skills and specialise in esports with this epic diploma

Bachelor of Design (Interaction Design) — awesome on its own or combine with engineering for a more product-development-specific pathway

FIND YOUR NICHE

There are so many characters — er, we mean roles — in the world of gaming! Find your match!

Designer: You're creative and can develop visual ideas that will translate to a digital environment.

Animator: You have the skills to take visual cues and turn still images into moving parts on a screen.

Sound designer: You have an ear for motion. You create the game theme song, the sound bites/character voices and the "foley" — think footsteps, crashes, cheering, background noise — in-game.

Programmer: You speak computer and can write code to enable the tech to put the creative aspects of a game in the right sequence.

Developer: Your job is to take the game from concept and pieces of code to a playable/interactive masterpiece.

Marketer: You know how to tap into the buyer's thinking and generate interest to make your product — i.e. game! — financially viable. Sell. Sell. Sell.

TAKE IT IN(TERN)

Internships are an excellent way to amp up your skills while still at uni and get a taste for the career vibes IRL. Hit a Google search on these companies to score an opportunity.

Wargaming Sydney
TikTok
Ubisoft
Atlassian
Gameloft
Canva

CAREERS withSTEM