Game Programming

BACHELOR OF SOFTWARE ENGINEERING

CAREER OPPORTUNITIES

- Game Programmer
- Software Engineer
- Graphics Programmer
- Engine Programmer
- Artificial Intelligence Programmer
- Technical Lead

You will find our alumni at: **Ninja Kiwi, Rocketwerkz, PikPok, Mighty Eyes, A44 Games, Grinding Gear Games, Hi-Rez Studios, Play Side** and many more...

Media Design School

GAME PROGRAMMING

Learn a range of programming languages from C++ to Swift, enabling you to succeed in the games industry and beyond.

Our teaching style not only gives you the knowledge of tools, but the kit to work in a team, an essential but overlooked necessity. Hone your soft skills while you craft a masterpiece with your small team. Be amongst the most sought-after graduates for New Zealand's gaming industry, forging alliances with the likes of Rocketwerkz, Pik-Pok and Outerdawn.

SOFTWARE/LANGUAGES YOU'LL LEARN:

- C/C++
- OpenGL (API)
- Lua
- Game Maker
- Microsoft Visual Studio
- Unreal
- Unity

INDUSTRY PARTNERS:

ACADEMIC PARTNER

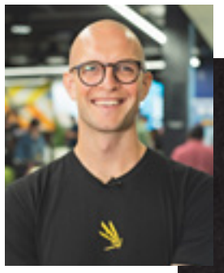
Unity

DEVELOPER PLATFORMS

PlayStation.First

iOS

MDS is the only school in New Zealand where students can develop games for the PlayStation platform and for iOS devices.



"Honestly, the student games here at MDS are just so good. I'm blown away. Given they work on them for about 7 months, its very very impressive. That's a testament to the students here and the lecturing faculty getting them all across the line."

Ben Carnall, CTO, Rocketwerkz

Falsepine

Voyager Softworks

Artists:
- **Emerson Davy**
- **Troy Coker**
- **Matthew Bland**

Programmers
- **Keane Carotenuto**
- **Nerys Thamm**

Falsepine, tagged as a 'cryptid hunting roguelike' is an isometric shooter, rogue-like action game where players delve into the depths of forbidden lands to hunt legendary monsters that threaten the local villages. Players will explore, finding lore and upgrades to help them make their next journey a little easier, but beware of death as you'll find yourself starting all over again with a new character!

Combining a Western theme with elements of horror, Falespine was inspired by games like Hunt: Showdown and Hades.

"So originally when we were starting out, we wanted to make something – we call it 'different' or 'unique', but really, that was more of an aesthetic thing. We noticed a lot of third year games were a lot more stylized – which is awesome – but we wanted to stand out with something a little different so we decided to try for realism. As for the gameplay itself, we started off more interested in actually 'oh we'll make it "Monster Hunter", right? You'll embark on a mission and you find the monster, take it down, and then we realized the loop wasn't fun. And we weren't very adept with the open world with a large realism aesthetic so we took inspiration from 'Hades' and other action rogue-likes, and we built a much stronger loop off that," says Matthew Bland, member of Voyager, the team behind Falsepine.

Another member, Nerys Thamm, calls her project a 'labour of love' and says *"the most important thing that I've learned is probably how to actually go through that proper software development process cause at the start you don't really know what to do and you're wandering around, a little bit aimless. But MDS equips you with the skills to have an idea and then know what to do to follow that project through to the end. I think it's the best place in the Southern Hemisphere when it comes to games especially if you want to get a job afterwards."*

The game has already been released on Steam and is available to play.

Bachelor of Software Engineering

SOME OF WHAT YOU'LL STUDY

Introduction to Software Engineering for Games
Begin with an introduction to the C++ programming language and the opportunity to construct simple games.

Fundamental Mathematical and Engineering Principles
Begin with basic mathematics before progressing to the core mathematical skills required for solving games problems.

Algorithms and Data Structures
This component teaches the fundamental data structures and algorithms that are needed to solve common gaming problems.

Introduction to Games Mechanics
Examine how games function from a technical perspective by playing, analysing, reading, discussing and writing about games.

Mathematics for Graphical Games
Learn to construct mathematical solutions to common gaming problems. Then design, develop, test, and enhance a game that requires a significant degree of mathematics.

Software Engineering Principles and Practices
This component focuses on the skills for project management experience, production methodology and version control.

2D Game Programming
Get familiar with more advanced programming concepts, including a basic introduction to user-interface design and software engineering management methods.

Game Design Principles
Learn principles of game design, including rules, progression and balance by collaborating in teams to ideate and create both physical and digital games.

PART-TIME LEARNING

Reduce your workload to enable you to work while you study, by taking our Bachelor of Software Engineering part-time.

If you choose the part-time study option, we'll work with you to create an individual study plan and map out together the courses you'll take in each semester and year.

To find out more about the Bachelor of Software Engineering, get in contact with our team at **domestic@mediadesignschool.com** or **international@mediadesignschool.com** for international students.

For up-to-date and comprehensive course information, including dates and fees, visit **mediadesignschool.com.**

Cover student work: Emerson Davy, Troy Coker, Matthew Bland, Keane Carotenuto, Nerys Thamm