

Matthew Jenkinson

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Personal Profile

Graduate of Edinburgh Napier University - Looking for a Graduate Programming career.

I am a keen problem solver and enjoy a technical challenge. Currently I am building and optimising my own ray-tracer.

Languages & Frameworks

- C / C++
- C#
- Java
- PHP
- Vulkan, OpenGL, GLSL
- DirectX11, HLSL
- OpenCL
- JavaScript

Education

2014 – 2018: Games Development BSc (Hons), Edinburgh Napier University (2:1)

4th year modules:

- Concurrent & Parallel Systems
- Advanced Games Engineering
- Information – Society & Security
- Computational Intelligence
- Honours Project

3rd year modules:

- Project Game Technology
- Design Patterns for Game
- Automated Games Design
- Graphics Programming
- Advanced Physics
- Survival Dutch
- Intercultural Skills
- Virtual Reality Fashion Experience

2nd year modules:

- Systems & Services
- Database Systems
- Software Development 2
- Intermediate Mathematics
- Software Engineering Methods
- Computer Graphics

1st year modules:

- Computer Systems 1
- Foundation Mathematics
- Software Development 1
- Intro to Human Computer Interaction
- Mathematics for Software Engineering
- Programming Fundamental

2012 – 2014: A Levels, Shelley College

Mathematics, Physics, Graphic Design

Honours Project – Programmatically Generating Normal Maps from Albedo Textures

For my final year Honours Project, I decided to create an application to create normal maps from existing albedo textures. I was inspired to do this as I had experimented in creating normal maps by hand in the past.

I wrote the application in C++ with the OpenGL API using only a few libraries including GLEW, GLFW, and SOIL. The preview window for it ran on the GPU using GLSL. I implemented the file I/O using the Windows API.

After implementing my algorithm to generate the maps in my application, I interviewed users to find out their opinions on both the program and its output. Once I did this, I was able to adapt my algorithm to their responses; subsequently when I interviewed a new group of users, I obtained many more positive responses.

Relevant Experience

Sept. 2016 – Jan. 2017: Student project on behalf of G-Star, Virtual Reality Fitting Room

Studying abroad in Amsterdam, I worked in a multi-disciplinary team for a real-world client – the fashion company G-Star. My team's task was to create a virtual-reality (VR) fitting room for the HTC Vive. My role was to build the locomotion and user interaction functionality, which I completed successfully using C++ and blueprints in Unreal Engine 4. Additionally, I was tasked with modelling and motion capture work to create the prototype, for which I used a range of tools including Autodesk Maya.

Jan. 2017: Game Logic Programmer, Global Game Jam 2017

The theme for this Game Jam was Waves. The concept for my team's game was to have waves of enemies attack the player, the catch was that these enemies were ghosts and could only be seen if the player shot them with a magic wave akin to a ship's radar.

My task on the project was to implement the visuals of the enemies appearing when they were hit and disappearing again after a short time. I did this using C# scripts in the Unity3D game engine. I was also made responsible for maintaining the codebase, making optimisations, and fixing bugs.

Jun. 2018 – Present: Self-Development

Since graduating I have worked on many of my own projects. These include learning the Vulkan API so that I can convert my honours project to use it and make games with it, creating my own techniques to systematically scramble images so that they can be copy-protected, learning to use steganography to hide watermarks in images, and as a result of my research: making my own CPU-based ray-tracer. I make regular updates to my blog about these projects and any others that I am working on.

Hobbies and interests:

In my spare time I like to work on various programming projects including Discord Bots, 3D Graphical Applications, Web Apps and PC Tools.

I also volunteer as part of a fan-translation group for Asian comics and manga, working as part of a multi-disciplinary and multi-cultural team across a range of time-zones.

My main passion is programming, and I am keen to learn how to use new technologies and learn about what goes into them.