JOSH CODD

Computer Science Student

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SKILLS

Throughout my A-Levels and university, I have experimented with various languages such as **Java**, **Visual Basic** and **Arduino.** Outside of education, I have continued my mission to keep learning and self-taught **JavaScript (ES6)** as well as some other web development technologies such as **React (with styled-components)**.

I am proficient in **Node.js** and **RESTful API's,** along with **SQL** and **MongoDB**. I'm passionate about writing clean code that is easily readable.

Below are some technologies that I use frequently.

Languages

C++
Java
JavaScript
HTML
CSS

Frameworks

React
Next.js
Express
Laravel

Tools

Git
Github
MongoDB
Heroku
Z shell/Terminal

PROFILE

A resilient and hard-working individual with a passion for technology and problem-solving. I love being challenged, and thrive when being faced with a problem. I'm eager to learn and improve my skills.

EDUCATION

Computer Science, Swansea University

I am currently in my third year of study. **My results for my second year were all 1st class, with an average of 86.5%.** Some of my favourite modules were:

- Computer Graphics - 90%
- Automata and Formal Language Theory - 81%
- Algorithms - 84%
- Software Engineering - 96%

Sixth Form

At A-Level, I studied Business, Computer Science and IT.

PROJECTS

Iridescence - Currently working on

Iridescence is a Ray Tracing engine written in C++ that I have been working on since May 2021. As of December 2021, Iridescence can perform direct lighting Ray Tracing to render scenes consisting of millions of triangles at over 15 FPS utilising just the CPU. This speed is obtained by using an acceleration data structure in the form of a KD-Trees. Scenes can also be rasterised using OpenGl to provide GPU acceleration, allowing real-time previewing of a scene. This rasterised preview ensures Iridescence is always interactive, even when more complex light transport algorithms are implemented in the future. Currently, I am implementing Path Tracing to achieve physically-based global illumination to render photo-realistic images. The future of Iridescence involves exploring various Bidirectional Reflectance Distribution Functions such as the Disney principled BRDF.

Listening Habits

A React web application for displaying a user's personalised Spotify data such as top tracks and artists; I also use this data to calculate the top genres. The app consists of a React front end as well as a Node.js server for authenticating the user using OAuth2.

EMPLOYMENT

Waiter, No Sign Wine Bar

I worked as part of a **team** in an extremely busy and fast-paced restaurant. Here, I gained skills such as **prioritising workloads** and **organising** effectively to ensure the most important tasks were done first while also ensuring that every customer had an amazing experience. I also developed **very good communication skills**.