Dave Todd

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djtodd709.github.io/PortfolioSite

Programming Skills and Expertise

- C++
- Lua
- GLSL
- HLSL

- Python
- Java
- SQL
- C#

- HTML
- CSS
- JavaScript
- Git & SVN

Work History

Full Gameplay Programmer, Frontier Developments, Cambridge, UK (Jun 2020 - Present)

I'm currently working as the primary developer responsible for all animal behaviour on Frontier Development's *Planet Zoo.* Over the course of 9 DLC releases my role has required me, amongst other things, to extend animation code, create artificial intelligence systems, and plan out the technical implementation of upcoming mechanics. I've been responsible for coordinating and communicating with all departments to bring features together, and I've also taken on responsibilities from other departments such as our render team. The role also requires me to have experience multithreading code, debugging and profiling code, and involves me working with Frontier's in-house game engine, Cobra.

Technology Camp Instructor/Lead Teacher, Fire Tech Camp, Gibraltar/Wycombe, UK (May 2017 – Jul 2019)

During the summers of 2017 to 2019 I worked for Fire Tech Camp in multiple locations, teaching younger children block based programming, and older children Java and Python. My role involved creating a new curriculum for a course that hadn't been taught before, and supervising the children throughout the camps that were residential. I have also taken on the role of Lead Teacher, overseeing the running of the camp and aiding all the ongoing courses.

Technology Camp Instructor, H-Campus/Fire Tech Camp, Treviso, Italy (Jul 2016)

For a period of 4 weeks I was one of three instructors sent by Fire Tech Camp to teach Italian children how to code in python, via Minecraft. I was trusted to decide how existing Fire Tech courses were adapted for a half-day format, and working with my two other colleagues, provide a great summer camp for H-Campus' clientele. Not having a superior with me in the latter weeks meant that it was also my job to represent the company to our partners at H-Campus.

Education and Qualifications

2019 – 2020: Newcastle University, UK

MSc: Computer Game Engineering **(First Class Honours)**

(Winner of "Best Overall Performance" and "Outstanding Dissertation" Awards)

2015 – 2019: University of Warwick, UK & McMaster University, Canada

BSc with Intercalated Year: Computer Science **(First Class Honours)**

Projects

2020: University of Newcastle, Dissertation *(Individual)*

Received a School of Computing "Outstanding Dissertation" award, for a project investigating different rendering techniques to generate volumetric clouds. This included the creation of a program implementing ray marching from scratch in OpenGL, with parameters to alter the structure and optimisation of the generated clouds. This resulted in highly detailed real-time graphics, on hardware not usually capable of producing it.

2019: University of Warwick, Final Project *(Individual)*

Received a first-class grade for developing a generative adversarial network able to generate components of a strategy game, and balance them to provide a fair gameplay experience. This effectively generated infinite amounts of strategic game content through machine learning. A strategy game was also developed in Unity, to demonstrate the use of the generated content in gameplay.

2017: Deutsche Bank, Stock Market Analyser *(Team)*

In a team as part of a software engineering course, we created an application for Deutsche Bank that investigated a stock market for suspicious activity and made predictions on future stock prices. Anomalies were also classified by severity, and the program could receive live data from the stock market. Out of 29 groups attempting the task, our team created the winning solution.

Other Achievements and Interests

- As a part of my Masters degree, I was able to spend a month with the UK engineering team at Playstation, learning the details of console development and creating software for Playstation 4 and 5.
- I developed my own YouTube channel which, due to my dedication of regularly creating new content for it, at its peak had 30,000 subscribers, and brought in a steady revenue every month. I now regularly appear in community events and videos for Frontier, to promote *Planet Zoo*.
- I took part in a fundraising challenge over the course of 2016, trekking Machu Picchu and raising £3000 for Make-A-Wish UK.
- I have done some private tutoring of an 11-year-old, helping with Computing schoolwork and developing his programming skills.
- I love games! Whether it's mainstream or indie titles, I enjoy knowing what's happening in the industry, and love to play innovative new releases.