Andrew Alford

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About Me

I am a junior Software Engineer from the UK specialising in both games development (through my degree) and programming for the web (through my own interests). My goals are to constantly be improving my quality of code and to work within industry on new projects with exciting technologies.

Education

BSC (HONS) Computer Science with Games Development

Northumbria University Newcastle - Sept 2016 - July 2019

- First Class Degree with Honours
- Graded at 82% with 360 credits
- I received 77% in my dissertation

Other Qualifications

A-Levels & GCSEs - Sept 2012 - July 2016

- A-Level Computer Science: Grate B
- A-Level mathematics: Grade B
- A-Level Design & Technology: Grade B
- Nine GSCEs including Mathematics, English, & Science

Skills

Languages

- JavaScript
- C#
- C++
- Java
- Python

Libraries & APIS

- React
- THREE JS
- CANNON JS
- OpenGL
- DirectX

Software & Tools

- VS Code
- Visual Studio
- Eclipse
- Overleaf
- The Adobe Suite

Projects

C#, Unity Engine, & WebGL

CPU Online - Northumbria University, May 2019

- My Undergraduate dissertation
- Using modern technology, CPU Online is a re-imagining of JASPer, a CPU simulator used to teach University students the fundamentals of computer science
- Registers, memory, and buses are animated and full interactive
- It includes a text editor so programs can be written, assembled, and loaded into memory
- A console, GUI, and a clock have been included for interacting with the simulator to play/pause, speed up, slow down, or step through the execution of programs

JavaScript, THREE JS, CANNON JS, & Microsoft Kinect

Crazy Carnival - Northumbria University, May 2019

- In this application, players can participate in multiple carnival games using a Microsoft Kinect
- Gesture tracking is used to control the player's movements in the game world as well as interactive elements in the game such as firing cannon balls and setting off fireworks
- Models are loaded into the scene dynamically using both JSON and JavaScript
- CANNON JS is used to simulate real-time physics for throwing bowling balls and kicking footballs

C# & Unity Engine

Midnight Rising - Northumbria University, May 2019

- A top-down twin-stick shooter game where players must survive waves of enemy zombies
- Zombies become increasing difficult over time through modifying their stats dependent on the wave number
- Zombies will dynamically spawn nearby the player outside the camera's frustum to maintain the games intensity
- The game is supported for both PC & Xbox One peripherals

JavaScript, THREE JS, & Virtual Reality

Galaxy Adventure - Northumbria University, December 2018

- Using JavaScript and the THREE JS library, this project allows users to view a low-poly animated galaxy through a VR headset
- Particle effects such as lava exploding from volcanoes was implemented for this project
- Planets orbit around the sun and each other all at various speeds

C++ & DirectX

Christmas Conundrum - Northumbria University, December 2018

- This is a demonstration of modifications made to Northumbria University's Shell Engine
- A component based architecture was implemented to keep classes lowly coupled and highly cohesive
- Sprite sheets that can be animated in various directions and speeds were implemented
- Collision detection between game entities was also implemented

C++ & Unreal Engine 4

No Rest for the Martians - Northumbria University, May 2017

- A game created using C++ & Unreal Engine 4 in which a human survivor fights against Mars' oppressive robot overloards

- In-game models visually change state and eventually explode as a result of damge caused by the player
- C++ has been used to script functional doors which open/close in response to the player's actions within the game
- C++ has been used to create reusable and customisable 'pick-up' items which affect the player's stats

Extra curricular Activity

Northumbria University Newcastle

Student Volunteer- Sept 2016 - July 2019

- Treasurer of the Ouseburn Farm charity society
- Secretary of the Ad-Hoc society
- Community Week captain for 2017/18
- All of these roles involved:
    - Leadership experience
    - Working alongside the students Union and other notable charities
    - safeguarding and stewardship training

Nissan

Third place winner of the Nissan Tech Challenge - April 2018

- A technical and physical challenge held between many Universities from the North East
- The challenge included:
    - Solving technical and coding-oriented puzzles under time
    - Coordinating as a team to work through physical trials such as tree-top obstacle courses and a country wide scavenger hunt

Experience

Tracerco

- Software Engineer, Oct 2021 - Present
- Associate Software Engineer, July 2019 - Oct 2021

Northern Football Club

- Bar Staff, Jan 2016 - July 2019

References

Northumbria University Newcastle

Mr. Chris Rook - Senior Lecturer

- Email: c.rook@northumbria.ac.uk
- Phone: 0191 2437615

Northern Football Club

Mr. David Giles - General Manager

- Email: davidgiles@northernfootballclub.co.uk
- Phone: 0191 236 3369