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Summary

- I am a **Gameplay Programmer** with **close to 2 years** of experience working with Games, AI simulations, and VR experiences. I am passionate about using my programming skills to translate and execute Game Design into finished products. Applying creative problem solving to technical challenges is at the core of what I do.
- I am an expert user of **C++, Unity, and C#**. I have experience with **Unreal Engine 4**.

Areas of expertise

Gameplay Programming	Game Development	Artificial Intelligence
Machine Learning	Virtual Reality	Augmented Reality
Game Design	Performance Optimization	Maths and Physics
Graphics Programming	Shader Programming	Data structures and Algorithms

Other areas – Multithreaded Programming, Scripting, UI, Audio Programming, Network Programming, Tools Programming, Unit Testing, Procedural Generation, GPU Programming.

Key Skills

Unity	C++ 11/14/17	C#
Unreal Engine 4	D3D11 and HLSL	Android Studio
Git and GitHub		

Other skills – Python, C, JavaScript, Java, HTML, CSS, PHP, SQL, OpenCL, Graphic Design, Animation, Web Design, Photoshop, Flash, Web Development, MATLAB Fuzzy Logic Toolbox.

Employment History

AI Simulation Software Engineer, IStein Neural Networks, Spain **June 2018 (Ongoing)**
Reported to CTO. Managed my own tasks. Consistently and autonomously delivered on required outcomes. Researched and developed solutions to reach those outcomes.

- C. Elegans Connectome Viewer** - Visualized complex biological neural activity data using Unity.
- Conceptualized the look and feel. Developed a visually appealing viewer for a C. Elegans connectome. Programmed UI and interaction, data parsing, shaders and visual effects, custom pathfinding, threading, and data playback.
 - The result is an interactive 3D experience or visualization that is used as a marketing tool representing the company's interests.

- Worm Machine Learning Demo** - Developed an AI/ML demonstration of worm with realistic muscle-driven movement navigating a simulated Unity 3D environment towards a food source.
- Developed realistic physics-based worm capable of multi-part, muscle-driven movement inspired by nature. Applied Reinforcement and Curriculum Learning to train it to work in 2D and 3D with obstacles. Implemented voxel-based solution for environment. 20+ sets of environments/worms can train in parallel.

Virtual Reality Developer (Part time), Gilded Mouse Media, Dundee **Feb 2016 - July 2017**

Developed/Programmed **14 completed Android GearVR educational applications/games**, using Unity. Part of a small team.

- Optimized performance for GearVR. Achieved 700k+ vertex count scenes at 60 FPS. Improved the Game Design, development process, application quality, graphical quality, UI and User Experience. Implemented Game Design to better achieve the goal of educating the user.

Intern, Game Development, Piñata Studios, Singapore

July 2015 - Sept 2015

- Built and improved a prototype for an existing Android title, Maxx Penn, while suggesting and implementing new features, including boss monster spawning, upgrades, and interactive elements. Used Unity.

Education

BSc (Hons) Computer Games Applications Development, Abertay University, Scotland (2:1 Classification)

Sep 2015 - July 2017

Honours Project Execution (A), Honours Dissertation (B+), Applied Game Technologies (B)
AI for Games Development (A), Mobile Network Programming (A), Prototype Game Development (B)

- **Machine Learning techniques applied in a 3D Hack 'n' Slash game – 4th Year Honours Project and Dissertation** - Developed 3D game in Unity with a hack 'n' slash combat system. Applied Q-Learning and Neuro Evolution, along with Rule-based systems. Refined AI to produce challenging and interesting behaviours.
- **Group Professional Project – SmartTome** – Geo-Social Augmented Reality Android game. Team of 8 students of different disciplines. Programmed geolocation based AR features for the game, along with Quest system.

Advanced Diploma in Game Design, MAGES Institute of Excellence, Singapore

Oct 2014 - Sept 2015

C++ Programming (95%), Multiplayer Games Development (87%), Final Project (86%)

- **Unity - 2D beat 'em up** with enemies and special attacks. Available on Google Playstore.
- **Team Unity project – 3D Driving game** – Serious game exploring repercussions of drunk-driving. Led team and programmed gameplay.

Online Certifications (Coursera)

Graph Search, Shortest Paths, and Data Structures. (Algorithms)

Divide and Conquer, Sorting and Searching, and Randomized Algorithms. (Algorithms)

Neural Networks and Deeplearning.

Other Achievements

Awarded **IGDA Scholarship** to attend **GDC 2016**.

Participated in 2 **Global Game Jams** and led a remote team for **UE4 Spring Jam 2018**.

Developed **mods for Divinity: Original Sin 2** with **thousands of cumulative downloads**.

Principal's Award for Employability at Abertay University.

Co-owner of Writing Business - Blogs and sales pages for a Game Development Education Institute.

Volunteer work – **IGDA Scotland**, Casual Connect Asia 2015, English teacher at local initiative.

Created and ran a custom **Dungeons and Dragons campaign** as Dungeon Master.

Abertay Game Development Society – Team projects and gave a talk about GDC experience.

Class representative during 4th year at Abertay.

Other Skills

Leadership and Teamwork – Worked with student teams during University on side projects and Game Jam games. Team leader for side projects and Game Jams. Assisted with Design and Production.

Communication – Developed an understanding of and skills to communicate with people from around the world and of different cultures through working and studying in UK, Singapore, USA, and India.

Personal – Quick learner – Picks up new skills and technologies such as Game Engines and new areas of programming easily.

Critical thinking and analysis – Examines and breaks apart any situation/problem to find efficient solutions.

Learned discipline, progression and goal setting through Fitness, Strength Training and Muay Thai.

Developed the ability to adapt to and enjoy all environments and situations by living abroad.

Appreciates art and creativity through Game Design, Writing, Music and Graphic Design.