Jack Howells

Games Programmer

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💼 Professional Experience

Red Kite Games Ltd   04/2025 – 07/2025

Professional Placement | C++   Leeds

- Used the Havok API to perform radial ray-traces for multi-surface entity navigation within an ECS framework.
- Used the Havok Visual Debugger to debug physics issues in the Unreal-Havok integration.
- Used Unreal Insights to profile my entity system; identifying optimisation opportunities which increased our max total count of entities from the 100's to the 1000's.
- Worked within a first-party ECS extension to Unreal Engine 5.
- Worked within a Continuous Integration framework via Unreal Horde; creating Unit Tests for my entity navigation system.
- Used Perforce to resolve merge conflicts, navigate streams, perform Swarm reviews, and commit my work.
- Used Jira to work within an Agile SCRUM framework.

Sumo Sheffield   01/2024 – 07/2025

Level 7 Games Programming Apprentice | C++   Sheffield

- Created a split-screen deferred rendering extension to a bespoke first-party games framework. Used HLSL to utilise point lighting, spot lighting, and decal rendering in this framework.
- Created a procedural player mesh generator via Bezier curve interpolation and shape sweeping in Snake Party.
- Created an offscreen texture canvas renderer using HLSL and DX11 for an unannounced project.
- Used RenderDoc and PIX to debug and profile post effects; identifying optimisation opportunities which resulted in a 78.5% improvement in GPU performance.
- Participated in QA testing for Oil Strike '75 (Developed for Still Wakes the Deep.)
- Worked with a multidisciplinary team of 30+ consisting of programmers, technical artists, designers, sound designers, producers and directors.
- Used Azure DevOps within an Agile SCRUM framework, organising our work into sprints and milestones.

📁 Projects

7 Days Til' Satan 🔗   03/2025

Unity | C# | Audio

- Created a dialogue system which implemented an animalese-style audio mechanic as inspired by Animal Crossing.
- Made four songs in FL Studio 20 for the game.
- Utilized Audacity for sound clip processing and editing.

Frogi 🔗   10/2024

Godot | GDScript

- Developed an arcade-style game in 48 hours for LudumDare 56, showcasing a frog character with physics-based tongue mechanics.
- Produced all game artwork using Aseprite and composed all music and sound effects with FL Studio 20.

🎓 Education

Physics BSc (2:1 - 64%)   10/2018 – 07/2022
University of Bath   Bath, UK
- Relevant Modules: Mathematical Methods (81%), Simulation Techniques (67%), Experimental Physics and Computing 1 (64%), Experimental Physics and Computing 2 (64%).
- Developed clean and modular code in Python, C & MATLAB for physical modelling projects.
- Gained a strong experimental-based understanding of many major fields of Physics, such as mechanics, quantum mechanics, electromagnetism, and astrophysics.

🧠 Skills

C++ • HLSL • Python • HTML • CSS • Havok • Unreal Engine • Unity • Godot • Git • Perforce • RenderDoc • PIX • VTune • Azure DevOps • Jira • Visual Studio

🌍 Languages

English — Native/Bilingual   **Welsh** — Native/Bilingual

Arabic — Basic

☣ References

Andrew Greensmith, *Technical Director*, Red Kite Games
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David Roberts, *Creative Director*, Red Kite Games
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Jacob Habgood, *Director of Education Partnerships*, Sumo Digital Ltd
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