Stephen Purdue

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Education

Royal Holloway, University of London 2026 - 2027
MSc – Artificial Intelligence

University of Winchester 2023 - Present
BSc – Game Development

- Completed comprehensive coursework in game design principles, mechanics, narrative design, and level development.
- Built game mechanics from the ground up utilizing Unity, C++, and C#.

Projects

Stock Market Predictor

- Improved forecasting reliability for investment strategies by **81%** by developing a machine learning model in **Python** using **Pandas**, **NumPy**, and time-series analysis to predict daily stock prices.

Exodus

- Developed a procedurally generated dungeon crawler using a **hybrid BSP and Random Walk algorithm**, producing structurally coherent and varied dungeon layouts at runtime, by implementing a **recursive spatial partitioning system with organic corridor generation**, a dynamic quest system, and a state-driven combat system with animations.

Synapse

- Developed a vertical slice combat arena in Unity using **Proximal Policy Optimisation** via **Unity ML-Agents**, training an adaptive boss agent across **320,000 steps** to dynamically calibrate attack frequency and aggression, validated through **TensorBoard reward curve analysis** and **live inference testing.**

Skills

Programming Languages: Python, Go, C#, HTML, CSS, JavaScript
Frameworks & Tools: Git, AWS, Docker, Pandas, NumPy, Matplotlib, TensorFlow
Concepts: CI /CD, Machine Learning