

ISHAN FERNANDES

Software Engineer · Game Developer · CS Student @ Royal Holloway, University of London

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PROFILE

CS student at Royal Holloway, University of London who ships and not just studies. Built 5 original browser games and full-stack projects from scratch, including a platformer with a working ghost replay system and a probabilistic AI opponent. Writes clean JavaScript and Python, understands software architecture at a design-pattern level, and actively expands into game engines (Godot) and cybersecurity. Looking for an internship or part-time role where real code ships.

PROJECTS & WORK

One Minute Left: Browser Platformer | ishanfernandes.uk/projects 2026

- ▶ Engineered a complete game loop in vanilla JS + Canvas API, delivering sub-16ms frame rendering with no external engine dependency.
- ▶ Designed and implemented a ghost replay system from scratch, recording and replaying player state across frames, a technique used in commercial racing and platformer titles.
- ▶ Built an adaptive difficulty engine that adjusts obstacle speed and spawn rate based on real-time player performance, keeping session retention high through dynamic challenge.
- ▶ Added a hidden speed-runner shortcut path, demonstrating intentional game-design thinking beyond pure coding.

MNMX Memory Battle: AI Card Game | ishanfernandes.uk/projects 2026

- ▶ Built a probabilistic AI opponent that tracks previously revealed cards and weights move decisions using Bayesian-style memory, not a random bot.
- ▶ Refactored the entire project from a single-file prototype to a clean multi-file architecture mid-development, applying real-world MVC separation principles.
- ▶ Implemented 5 progressive difficulty tiers that tune AI aggression and memory retention, extending average session length.

Course Management System | Academic Project 2025

- ▶ Designed a multi-entity OOP system (students, courses, grades, attendance, rankings) fully modelled in UML before a single line was written.
- ▶ Implemented CSV-based persistence and Matplotlib visualisations, delivering a working data pipeline from file I/O to graphical output.
- ▶ Applied 3+ design patterns (e.g. separation of concerns, single responsibility), documented in UML diagrams submitted alongside the codebase.

Portfolio Website | ishanfernandes.uk 2025 - Present

- ▶ Built entirely from scratch with zero frameworks, pure HTML, CSS, and modular JavaScript across separate files, demonstrating deliberate architectural choices, not convenience.
- ▶ Implemented JS animation system, modal stack, form validation, and full responsive layout without a single library.
- ▶ Live production site, publicly accessible and not a Figma mock-up or localhost demo.

TECHNICAL SKILLS

Languages	JavaScript (advanced) · Python · Java · HTML5 / CSS3 · SQL
Game Dev Engineering	Canvas API · Custom game loops · Collision detection · Ghost replay · Adaptive AI · Godot
Web	DOM manipulation · REST APIs · Responsive design · CSS animations · Form validation
Security	Network security · Threat modelling · Encryption fundamentals · Ethical hacking concepts
AI / Tools	Probabilistic AI agents · Symbolic AI · GitHub Copilot · Prompt engineering

EDUCATION

BSc Computer Science | Royal Holloway, University of London

2025 – Present

- ▶ Specialising in Software Engineering from Year 2; core modules include Algorithms, OOP, AI, Network Security, and Mathematics for CS.
- ▶ Year 2 planned modules: Software Engineering · Symbolic AI · Mathematical Methods for CS.
- ▶ All major coursework projects shipped as public GitHub repositories with working demos.

Self-Directed Learning

Ongoing

- ▶ Transitioning browser game portfolio to engine-based development: actively building in Godot (GDScript + scene system) and exploring Ren'Py for narrative formats.
- ▶ Studying offensive and defensive security independently alongside formal degree modules — including ethical hacking methodology and secure-by-design software principles.

Portfolio: ishanfernandes.uk · GitHub: github.com/scn01 · Available for internship / part-time from Summer 2026