Finlay Cooper

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Brighton / Bristol

Experience

Sep 2025 – Current
Graduate Teacher Level 1 & 2 – *University of Bristol*
Supported teaching of lab sessions for the Computer Graphics unit:
- Guided other students through both technical and theoretical issues.
- Addressed questions about course structure and further study.
Mentored a team of students on their Software Engineering Project:
- Ensured all members were organised and regularly contributing.
- Advised them on planning, designing, and building their software.
- Gave weekly feedback on their progress and answered any questions.

Sep 2020 - May 2022
Farm Shop Assistant – *Rushfields Plant Centre Ltd*
Served customers at a local garden centre's farm shop:
- Managed customer-facing stock, conducted sales on the till.
- Greeted / served customers on the cheese, meat and pastry counters.

Jul 2019 - Jul 2019
Work Experience Intern – *MakeReal Ltd*
Immersed myself in the workings of a small VR company:
- Took part in daily stand-ups, user-tested in-development products.
- Created an interactive VR game in Unity with a co-worker.

Education

Sep 2022 - May 2026
Computer Science (MEng)
University of Bristol – Expected First Class

Sep 2020 - May 2022
Mathematics, Further Maths, Computer Science, Physics
BHASVIC – A A* A* A*

Skills & Interests

- C# (Unity)
- C++ (SDL2, OpenMP)
- Python (PyTorch, Tensorflow, OpenCV)
- TypeScript, HTML, CSS (React, Tailwind)
- Java (Spring Boot)
- Git (GitHub, GitLab, CI/CD)

- CSS GameJam: two award-winning games.
- DofE Silver; Violin Stage 7; Karate 2nd Kyu.
- Cycling, Bouldering, Boardgames.

Projects

Jan 2025 – May 2025
Shifting Sands – *University of Bristol (82% - Highest in Year)* | Unity, Azure Kinect SDK, OpenCV
Coordinated with a team of six to design a mixed-media computer game in Unity:
- Followed agile development processes, with sprints to produce frequent demos, and weekly team retrospectives.
- Used the Kinect SDK to poll the height of a physical sandpit and reconstruct it as a Unity mesh in real time.
- Developed enemies that path-find across the generated terrain using slope angle, avoiding steep gradients.
- Came up with IPC solutions to send images to a Python server to process hand landmarks with Google's MediaPipe.

Sep 2024 – Dec 2024
C++ Software Rasteriser and Ray Tracer – *University of Bristol (77%)* | OpenMP, SDL2
Constructed an interactive C++ software rasteriser and ray-tracer from scratch:
- Wrote an .obj and .mtl parser to load custom scenes and assets.
- Implemented rasterisation of triangle-based models in an SDL2 window with keyboard input to move camera.
- Implemented ray-traced flat, Gouraud and Phong shading models, shadows, area lights, normal maps, and mirrors.
- Made use of the OpenMP library to quickly parallelise ray-trace functions and speed up rendering.

Sep 2023 – May 2024
Livestock Management App – *University of Bristol (78%)* | MongoDB, ReactJS, Spring Boot, Git
Worked in a team of five to create a livestock management web app for a local client (Windmill Hill city farm):
- Collaborated on a GitHub repository; made use of branches, created and reviewed PRs.
- Consulted regularly with the client to receive feedback and drive the project towards their requirements.
- Employed Spring Boot to quickly get a Java backend with MongoDB up and running.
- Leveraged React (TypeScript) with Google's Material Design components for a professional-looking frontend.

Sep 2023 – Dec 2023
Distributed Game of Life – *University of Bristol (86% - Highest in Year)* | GoLang, SDL2, AWS
Cooperated with a partner to distribute a simulation of Conway's Game of Life to workers in the cloud:
- Parallelised a serial implementation of GoL using Go channels, synchronising the threads at each turn cycle.
- Distributed the single-threaded system to four AWS workers, with a single broker node for task management.
- Introduced a halo-exchange technique via RPCs to optimise Game of Life world division among workers.