Daniel Hoang

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Seeking Graduate Software Engineer roles from Autumn 2027

Education

Imperial College London, MSc Advanced Computing — Sept 2026 – Sept 2027

University of Southampton, BSc Computer Science — Sept 2023 – May 2026

- **First-Class Honours, 76% average.** **A-Levels:** A*A*AA — Mathematics, Further Mathematics, Physics, Computer Science.
- **Dissertation — *Reconstructing 3D Geometry from Fisheye Photographs*:** built the pipeline in MATLAB, deriving the camera model from scratch rather than calling a library; least-squares optimisation for piecewise-planar shape-from-shading over hundreds of images, dewarping to within 1% with 13° mean angular error.

Experience

Software Engineering Intern, Web, *Trainline* — July 2026 – Present

- Own an A/B experiment end to end on the Railcard purchase flow of Trainline's consumer web platform (27m active customers) — hypothesis, exposure design, variant build and statistical readout — in TypeScript, React and GraphQL, measured in Statsig.
- Defined the experiment's exposure trigger point with product and data — the moment a user counts as having seen the variant — so the readout measures the intended population rather than incidental traffic, and specified part of the metric event schema the analysis depends on.
- Built experiment health monitoring in New Relic to surface regressions before they reach conversion metrics, and modernised the team's web repository by replacing legacy API calls with new GraphQL data sources.

Technical Officer, *Southampton Cybersecurity Society* — May 2024 – May 2025

- Designed, built and shipped the society's website in Next.js — admin panel for dynamically updating events and documents, plus a file upload system — serving thousands of members, still in production.
- Authored ~80 practice CTF challenges, largely cryptography, and ran weekly sessions for ~200 members, including events with industry partners **Netcraft** and **Reversec**.

Projects

PALADIN — LLM Reasoning & Vulnerability Evaluation Framework — Nov 2025

- Built an evaluation framework measuring whether large language models reason about software vulnerabilities or recognise ones seen in training, applying formal methods to identify and patch the vulnerabilities surfaced.
- Engineered the data pipeline — preprocessing the TitanVul dataset and using a Qwen-32B model to generate synthetic reasoning paths and exploit mitigations — then measured generalisation across datasets under zero- and few-shot prompting, designing evaluations that separate symbolic reasoning from pattern matching.

Competitive Programming — ICPC NWERC Regional Competitor — May 2023 – Present

- Qualified for NWERC 2023 (ICPC Northwestern Europe Regional, Netherlands) as the University of Southampton's top-ranked team, after placing 61st of ~250 teams at UKIEPC.
- Compete regularly in team and individual contests and set problems for the university's competitive programming society; C++ and Python.

PathWise — HackEurope, *devpost.com/software/pathwise-c159jq* — Feb 2026

- Built the Next.js/Firestore frontend and a LangChain-orchestrated agent pipeline on Claude Haiku turning notes into adaptive courses, designing the tutor agent's context strategy to target each user's weakest topics from quiz performance and prior sessions — shipped in 30 hours at a 1,000-builder hackathon.

Unimatch — Royal Hackaway Winner, *github.com/danhoangg/unimatch* — 2024

- Took first place for best use of Auth0 against 116 participants, building the real-time chat feature in React, MongoDB Atlas and WebSockets with a team of three.

Skills

Languages: TypeScript, JavaScript, C++, Python, Java, SQL, MATLAB, Sage

Web & Data: React, Next.js, GraphQL, TailwindCSS, WebSockets, Firestore, MongoDB

Tools & Cloud: Git, Docker, CI/CD, Linux, Azure, Google Cloud, Firebase, Statsig, New Relic, LangChain

Certifications: UK Cyber Team Competition — Finalist, The SANS Institute (Feb 2025)