

Hansel D'Cruz

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EDUCATION

University of Leeds

BSc Computer Science (with Year in Industry)

Leeds, UK

2022 – Present

- On track for **First Class Honours**

• Modules include Operating Systems, Networks, Compiler Design, Numerical Computation, Data Structures and Algorithms

Notre Dame Catholic Sixth Form College

A-Levels: Further Mathematics, Mathematics, Computer Science, Physics

Leeds, UK

2020 – 2022

EXPERIENCE

Software Engineer

Jul 2025 – Oct 2025

Trimble Inc.

Leeds, UK

- Engineered PowerShell build and test script suites to automate assembly discovery, image construction, and application builds
- Dockerized a legacy C++/C# engineering calculator application using multi-stage builds
- Configured and troubleshoot 32-bit and 64-bit DLL dependencies using Dependency Walker
- Performed unit testing with MSTest and used advanced Git workflows including branching, merging, and rebasing
- Integrated an MCP server for bidirectional communication between AI agents and local tools
- Worked in an Agile environment with weekly sprints, planning, and demos

Software Engineer (Work Placement)

Jul 2024 – Jul 2025

Siemens Digital Industries Software

Cambridge, UK

- Developed a Django bug tracking and data unification system, migrating legacy test and defect data into PostgreSQL
- Refactored Python pre-commit hook scripts, reducing execution time of specific checks by up to 33%
- Built a production-grade C/C++ wrapper interface for Python using ctypes, handling callbacks and marshalling
- Parallelised overnight batch jobs in a distributed testing environment using a Perl-based queueing system
- Fixed UI defects in an internal C++ graphical application
- Tested and validated ARM CPU security features using custom AArch64 assembly on Android devices

PROJECTS

Foreign Language Dictionary

React, Redux, MongoDB, Redis

- Developed a dictionary and web application for the Konkani language
- Implemented secure authentication, authorization, and routing
- Used Redis for cache validation and Git for version control

Pathfinding Algorithm Simulator

JavaScript, Algorithms

- Built a maze-generation visualization web application
- Implemented A*, Dijkstra's, and DFS algorithms with real-time traversal animations
- Focused on algorithm design, data structures, and UI visualization

TECHNICAL SKILLS

Languages: C, C++, C#, Java, JavaScript, TypeScript, Python, Bash, Perl

Web: React, Next.js, Flask, Django, HTML/CSS, Tailwind

Databases: PostgreSQL, MongoDB, SQLite, Prisma ORM

Tools: Git, Docker, Linux, CI/CD, REST APIs, Agile/Scrum

INTERESTS

Competitive Programming (Competed in UKIEPC), Game Development, Philosophy, Chess