

Ethan Villanueva

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EDUCATION

University of Nottingham

Bsc Computer Science with Year in Industry

Sep. 2023 - Present

Nottingham, Nottinghamshire

- **Attained grade First-class** in the previous academic year.
- **Relevant modules:** Developing Maintainable Software, Fundamentals of Artificial Intelligence, Databases and Interfaces, Mathematics for Computer Scientists, Operating Systems & Concurrency, Programming and Algorithms, Programming Paradigms, Systems and Architecture

King Edward VI College

A-Levels

Sep. 2020 - Jun. 2022

Stourbridge, West Midlands

- **Achieved 3 A's** in Physics, Maths, Geology.

Queen Mary's Grammar School

GCSEs

Sep. 2015 - Jun. 2020

Walsall, West Midlands

- **Obtained All 7's/8's (A/A*)** across 11 subjects.

PROJECTS

- **Forest Fire Prediction Models (Python)**
Engineered **linear regression** and **neural network** predictive models to predict a forest fire's area of effect based on environmental data
 - Utilised **Scikit-learn** and **Pandas** libraries for data processing, model training, and evaluation
 - Achieved high model accuracies with a Mean Squared Error of **0.062** and **0.058** (with k-fold cross-validation)
 - Documented insights, performance, and methodologies with visuals in Jupyter Notebook using **Matplotlib**
- **Test-Driven Development Group Project (Java)**
Led a team of three in planning and implementing **JUnit** tests for an existing property viewing application
 - Refactored existing code, by continually executing **unit and integration testing** through **Agile Methodologies**
 - Accomplished **96.8%** and **94.0%** code coverage for two main classes
 - Managed **Git** repository and documentation
- **Vehicle Management System**
Built web app using **HTML**, **CSS**, and **JavaScript** to manage vehicles and owners via **Supabase PostgreSQL** database
 - Implemented **RESTful API** interactions to service user queries on person or vehicle lookups and adding new entries
 - Ensured accessibility with Lighthouse
 - Tested core functions using Playwright
- **Reversi Game (Java)**
Developed a Reversi board game using the **Model-View-Controller** design pattern
 - Ensured flexibility and modularity with custom controller and view subclasses
 - Implemented **AI** auto-move functionality
 - Designed a user-friendly interface using **Java Swing** and **AWT** to display real-time game updates for both players
- **Route Network Server (C)**
Produced a **TCP/IP** server to manage and query a network graph using a custom **protocol**
 - Implemented Dijkstra's Algorithm for routing and pathfinding
 - Created and utilised a graph library enabling dynamic updates to the network
 - Facilitated **client-server** communication with **network persistence**

SKILLS

Technical Skills:

- **Languages:** Java, Python, C, SQL, Haskell, HTML, CSS, JavaScript, HDL, ARM Assembly
- **Databases:** Supabase, SQLite
- **Frameworks and tools:** Git, UML, Scikit-learn, Pandas, Matplotlib, JUnit, Agile frameworks, Java Swing, AWT

Soft skills: Problem solving, Team Collaboration, Communication, Adaptability, Project Management

EXTRACURRICULARS

- **UoN Annual Programming Contest 2024**
 - Collaborated in a team of 3 to tackle problems focused on algorithm design, data structures, and mathematical concepts and reasoning
- **HackSoc and CompSoc**
- **ChessSoc**

WORK EXPERIENCE

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|---|------------------------------|
| Next - <i>Team Member</i> | Jul. 2023 - Sep. 2023 |
| ▪ Managed inventory and optimised product displays using ZEBRA devices, improving team efficiency | |
| Five Guys - <i>Crew Member</i> | Oct. 2022 - Jan. 2023 |
| ▪ Achieved bonuses for keeping order times under 8 minutes whilst displaying outstanding customer service | |