

# SHANE WHELAN

Lucan, Dublin, Ireland

[shane.whelan2@ucdconnect.ie](mailto:shane.whelan2@ucdconnect.ie) · +353 83 048 7198 · [shane-whelan.ie](http://shane-whelan.ie)

Software Engineer — Powertrain Captain @ UCD Formula Student

## Education

**BSc Computer Science with Data Science & AI** 2023 – 2027 (Expected)

University College Dublin

*Current GPA: 4.04/4.20 (96.2%) - First Class Honours (1.1)*

**Leaving Certificate** 2021 – 2023

Colaiste Phadraig CBS, Lucan

*Achieved maximum possible points (625)*

## Skills

- **Languages:** Java, Python, C++, C, SQL, JavaScript, HTML/CSS
- **Technologies:** Git, Docker, Firebase, Google Cloud Platform, Google Guava, Artillery, Arduino, JavaFX, Hadoop, Gephi, Streamlit, Plotly
- **Concepts:** Object-Oriented Programming (OOP), Functional Programming, Data Structures & Algorithms, Agile Methodologies, MVC Architecture, Computer Networking, MapReduce, Data Visualisation

## Professional Experience

**Software Engineer Intern** June 2025 – August 2025

Twilio (Dublin / Remote)

- Spearheaded the deprecation of a legacy microservice by migrating its core logic into a high-throughput, real-time messaging platform, improving system reliability for Apple Push Notifications (APNs).
- Engineered a new APNs binding adaptor in Java, piloting the modern `apns-http2` library to reduce network errors and operational overhead.
- Designed and implemented a thread-safe, in-memory APNs client caching solution using Google Guava to boost performance and enable accurate, comparative load testing.
- Conducted load tests using the Artillery framework to validate that the new implementation demonstrated superior latency and throughput under load.

**Powertrain Captain & VCU Developer** Oct 2024 – Present

UCD Formula Student (UCDFS), Dublin, Ireland

[GitHub Repository](#)

- Promoted to Captain in recognition of technical contributions and leadership within the powertrain division.
- Writing and debugging embedded C++ firmware for the team's custom Vehicle Control Unit, managing real-time data acquisition and vehicle dynamics.
- Developing software for CAN bus communication to ensure reliable data transmission between the VCU, motor controller, and battery management system.
- Collaborating with engineering sub-teams to integrate software with physical hardware and validate system performance on the track.

## Hospitality, Tuition & Retail

2022 – Present

Boland's Pub, Self-Employed & Previous Retail Roles

- Managing bar and floor operations in a fast-paced environment, demonstrating high-level multitasking, teamwork, and interpersonal communication.
- Balancing consistent part-time work with a demanding academic schedule, maintaining a 1.1 GPA through disciplined time management.

## Projects

### S&P 500 Big Data Analysis – MapReduce vs. SQL

Jan 2026 – Mar 2026

[GitHub Repository](#)

- Processed and analysed historical stock price data for S&P 500 companies using a 2.7 GB dataset of 56.7 million rows sourced from 2,000 individual CSV files.
- Benchmarked traditional relational database performance (MySQL) against distributed MapReduce processing, implementing custom mapper and reducer scripts in Python.

### Lichess Insights – Interactive Chess Analytics Dashboard

Jan 2026 – Mar 2026

[GitHub Repository](#)

- Built an interactive data visualisation dashboard using Streamlit and Plotly to explore patterns across ~20,000 chess games.
- Designed seven distinct visualisations to surface insights on opening strategy, skill tiers, and time controls.

### SmartCert – AI-Powered Study Platform

2025

[View it Live](#)

- Developing a full-stack web application using Firebase and JavaScript to provide AI-generated study materials for Irish Leaving Certificate students.
- Integrating LLM APIs to generate curriculum-specific practice questions and flashcards.

## Honours & Awards

### Colm Church Scholarship Recipient

2026

One of 3 finalists selected by St. Raphael's Garda Credit Union for academic excellence and community contribution (Award: MacBook Air and annual educational bursary).

### UCD Entrance Scholar Award

2023

Awarded to incoming students with the highest academic results from their secondary school.