

Ayaan Dalvi

SCS'30 | Carnegie Mellon University Qatar

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SUMMARY

CS Major at Carnegie Mellon University Qatar with a focus on artificial intelligence and machine learning. Built a specialized kinetic energy harvesting pad using piezoelectric elements to generate electricity. Also engineered a water pressure and GPS tracking system to optimize humanitarian water distribution in Sudan. Currently expanding focus onto robotics and game development.

EDUCATION

IGCSE & International A-Level, Park House English School

09/2022 – 06/2026 | Doha, Qatar

A-Level: AAA (Maths, Physics, Computer Science)

AS-Level: AAAB (Maths, Physics, Computer Science, Chemistry)

IGCSE: A*A*A*A*A*A*BBBC

BSc Computer Science, Carnegie Mellon University Qatar

08/2026 – 05/2026 | Doha, Qatar

SKILLS

Programming Languages

Python, C++, JavaScript, HTML/CSS

Hardware & Embedded Systems

ESP32-S3 Microcontrollers, Arduino IDE, PlatformIO, Sensor Integration (GPS, Pressure)

Cloud & Infrastructure

Microsoft Azure, Ubuntu Linux, Server Administration (SSH/SFTP), Google OR-Tools

Developer Tools

Visual Studio Code, Git/GitHub Desktop, Termius

COURSES

Fundamentals of Programming & CS,

Carnegie Mellon University

Concepts of Mathematics, Carnegie Mellon University

Matrices & Linear Transformations, Carnegie Mellon University

Reading & Writing in an Academic Context,

Carnegie Mellon University

EXPERIENCES

Computer Science Teaching Volunteer,

Park House English School

2024 – 2025

- Mentored Year 10 students for 20 hours in foundational computer science coursework and practical programming concepts.
- Assisted educators in delivering technical curriculum, providing one-on-one troubleshooting and guidance to improve students' problem-solving skills and coding proficiency.

Sustainability Initiative Leader, Eco Club,

Park House English School

2024 – 2025

- Spearheaded environmental initiatives to reduce campus energy and resource consumption through targeted conservation strategies.
- Directed and produced the "Switch to Save" multimedia awareness campaign, distributed and promoted across the International Schools Partnership (ISP) network to advance regional sustainability efforts.

PROJECTS

Smart Jerry Can - Water Distribution Tracker,

CMUQ Lifeline Hackathon | Embedded Systems & Sustainability

01/2026

Engineered a Smart Jerry Can IoT prototype using an ESP32-S3, pressure sensors, and GPS to monitor water volume and location in Sudan. Used Google OR-Tools to optimize delivery refill routes from sensor telemetry, improving logistics, reducing waste, and supporting reliable water access in crisis environments.

Kinetic Energy Harvesting Pad,

ARIU Innovation Challenge | Hardware Engineering

04/2025

Engineered a scalable, kinetic-energy harvesting pavement prototype using piezoelectric plates to generate electricity, integrated with custom circuitry and phase-change materials for thermal regulation in extreme climates.

AWARDS

Tournament of Champions Award Winner,

World Scholar's Cup | Yale University

ARIU Innovation Challenge 3rd Place,

Al Rayyan International University