Swapnanil Chattopadhyay

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EDUCATION

The University of Sheffield   Sheffield, UK
BEng Electronics and Computer Engineering with a Year in Industry   *Sep. 2024 – June 2028*
- Achieved 82% overall in Year 1 (First Class): Electronic Devices and Circuits (88%), Data Structures and Algorithm (83%), System Design Analysis (83%),

The Beauchamp College   Leicester, UK
A-Level - Physics, Mathematics, Computer Science and Chemistry   *Sep. 2022 – June 2024*

TECHNICAL SKILLS

Programming Languages: Java, Python, C, SQL, Mendix, HTML/CSS, Rust
Software: LTSpice, Fusion360, LaTeX, Altium, AutoCAD, Git, LTspice, Altium, Fusion 360, Xschem, KLayout, Ngspice
Agile Methodologies: Experienced in Agile practices.
Database Management: Experience in SQL and database integration with python.

RELEVANT EXPERIENCE

Summer Intern – AI/ML (Data Archiving & Predictive Analytics)   Aug. 2025 – Sep. 2025
Mastek Systems Ltd (UK)   *Full-time*
- Developing a copilot Select AI agent that queries a data model or warehouse for efficient legacy data retrieval and decision-making support.
- Facilitated predictive analytics for data warehousing through stock aggregation, historical data processing, and demand forecasting.
- Training and developing skills Oracle technologies, including 8+ hours woth of courses such as Oracle AI Vector Search and Autonomous Database 23ai, to strengthen AI-driven database skills.

SELSA Cohort 2025 – Engineering Leadership Scholar   Sep. 2025 – Present
Sheffield Engineering Leadership and Service Award (SELSA)   *Part-time*
- Selected as one of 50 engineering undergraduates (out of 1,500+) across departments for this two-year leadership programme inspired by MIT's Gordon Engineering Leadership Program.
- Undertaking four High-Impact Experiences (two per year), each 45 hours across work-based or service projects
- To Undertake a two-day leadership bootcamp and a two-day SELSA hackathon; continuing workshops on Working Styles, Project Management, Business Model Canvas, and Change Management, plus industry guest talks.

Software Engineer Job Simulation   Jun. 2025 – Jun. 2025
Electronic Arts (EA) · Remote   *Part-time*
- Proposed a new feature for EA Sports College Football and wrote a Feature Proposal describing it to stakeholders.
- Built a class diagram and created a C++ header file with class definitions for each object.
- Patched a bugfix and optimized the codebase by implementing an improved data structure.

Quantitative Research Job Simulation   Jun. 2025 – Jun. 2025
JPMorgan Chase · Remote   *Part-time*
- Completed a simulation focused on quantitative research and financial modelling.
- Analysed a book of loans to estimate customer default probabilities.
- Applied dynamic programming to convert FICO scores into categorical data for default prediction.

PROJECTS

Project SHARC | *(Extracurricular) OpenLane, Xschem, Docker, iverilog, Ngspice, Klayout*   Jun. 2025 – Present
- Developing and verifying RTL modules by 5+ creating cocotb-based testbenches, combining directed and randomized testing for input collectors and event detection logic.
- Led a Chipathon team in designing custom standard cell libraries (D-FF with enable and T-FF) using Xschem and Dockerized flows, improving verification efficiency through automated Ngspice simulations and padrame generation in KLayout.

Project SunSat | *(Extracurricular) LTspice, Fusion360, Git, C, Altium, Teamwork*   Oct 2024 – Present
- Collaborated with a team of 8 for UKSEDS cubesat competition, programming a Teensy-based satellite in C; developed PCB schematics in Altium and validated power systems in LTSpice, achieving 72% in the final Critical Design Review phase (highest ever in SunSat history)

Network Route Optimisation | *C, Algorithms, File I/O, Data Structures*   May 2025.
- Implemented Kruskal's algorithm in C to construct a Minimum Spanning Tree, optimising graph connectivity costs; developed efficient edge-sorting and file-based input parsing routines to handle weighted networks.

Global Engineering Challenge | *Leadership, STEEPLE Analysis, Public Speaking*   Jan 2025 – Jan 2025
- Led a multidisciplinary team of 6 to design sustainable digital education solutions in Johannesburg, earning a Distinction and the Dr. Trish Murray Professional Behaviours Prize among a cohort of 40+ people.

LEADERSHIP & SOCIETIES

Engineers Without Borders (EWB) Society | *President*   Sep. 2025 – Present
- Elected President of a 40+ member society to lead direction and mission on sustainable engineering practices and development, oversee a £2000+ budget, team recruitment, partnerships, and long-term strategic goals.

Electronic and Electrical Engineering Department Society (EEESoc) | *Vice President*   Sep. 2025 – Present
- Managing the planning of events, coordinating across sub-committees, ensuring representation of student voices at departmental meetings, and supporting the President in day-to-day affairs for a 100+ member society.

Electronic and Electrical Engineering Department Society (EEESoc) | *Sports Officer* Nov. 2024 – May 2025
- Executed 3 inter- and 3 intra-departmental football matches, managing logistics, pitch bookings, and cross-society coordination to ensure smooth operations.

AWARDS + CERTIFICATIONS

Awards
- Bronze 2 in Senior Physics Challenge in 2022 and in The British Physics Olympiad Round 1 in 2023, showcasing strong problem solving, analytical thinking and application of knowledge skills.
- Silver in the Senior Mathematics Challenge by UKMT in 2023 showing strong mathematical foundation skills.
- Certifications on Python Programming from the University of Michigan, Mathematics for Machine Learning from Imperial College London and IBM MQ essentials helped me gain knowledge and practical coding skills.
- As part of my summer internships, I have access to AWS and am undertaking AI and ML courses with the aim of becoming an AWS Certified AI Practitioner.