

ARNAV DUTTA

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EDUCATION

Master in Science (Hons) in Physics

2023 - 2027

King's College London

Second-Year Module: Experimental Physics, Quantum Mechanics I, Electromagnetism, Mathematical Methods for Physics, Introduction to Numerical Modelling, Thermal Physics, Relativity and Sub-Atomic Physics, Mathematical Methods Theoretical Physics.

First-Year Module: Classical Physics(Electromagnetism, Mechanics and Matter), Mathematics & Computation for Physics, Introduction to Modern Physics, Introduction to Astrophysics, Experimental Physics

A and AS Levels

2021 - 2023

Whitmore High School, London

A-Levels: Further Mathematics, Mathematics, Physics, EPQ (String Theory)

AS Levels: Mathematics, Physics, Chemistry

GCSE

2016 - 2021

Whitmore High School, London

Subjects: Mathematics, English Literature & Language, Triple Science, Computer Science, Geography, Music

TECHNICAL SKILLS

Languages Python (NumPy, SciPy, SymPy, Matplotlib), MATLAB

Software Simulink, LaTeX (Overleaf), Microsoft Office Suite, Fusion 360

Expertise Computational Physics (Monte Carlo Methods, Metropolis Algorithm, Statistical Mechanics), Numerical Methods, Algorithm Design, Data Analysis, CAD Design (Fusion 360), Simulation & Modelling (MATLAB/Simulink)

EXPERIENCE

EY Technology Consulting

Aug 2024

Shadowing Placement

London, United Kingdom

- **Shadowed** professionals specializing in Cloud Transformation and AI solutions.
- **Analyzed** best practices in Software Engineering, Cloud Risk, and Control management.
- **Enhanced** knowledge of industry-standard techniques through observation and guided interactions.
- **Gained** insight into real-world technology consultancy processes and workflows.

Tata Consultancy Services (Aerospace & Defence)

Jul 2024

Work Experience Placement

London, United Kingdom

- **Explored** aircraft fundamentals, flight dynamics, and aerodynamic principles.
- **Investigated** mechanisms and functionality of flight control surfaces.
- **Researched** control systems and system-design strategies, enhancing understanding of aviation systems.

- **Facilitated** GCSE practical sessions in Physics, Chemistry, and Biology.
- **Demonstrated** experiments including titration, photosynthesis, and electric circuits.
- **Prepared** laboratory equipment and materials, ensuring effective hands-on learning in a safe environment.
- **Guided** students individually, clarifying concepts and methods to improve their academic performance.
- **Evaluated** student performance and provided constructive feedback.

UNIVERSITY SOCIETIES

KCL Racing, King's College London (Formula Student)

2023 - 2025

Technical Team Member – Powertrain & Steering Team

London, United Kingdom

- **Designed** drivetrain components, including axle, differential and transmission; contributed significantly to engine systems for the 2024 car.
- **Helped design** the steering system for the 2025 car, improving handling and integration with the drivetrain.
- **Engineered** cost-effective solutions, optimizing materials and design efficiency within strict budget constraints.
- **Managed** DBOM, ensuring accurate documentation, meticulous cost tracking, and adherence to a limited budget.
- **Defended** team's Engineering Design and Cost & Manufacturing strategies at Silverstone Formula Student Concept Class (July 2024).
- **Achieved** a milestone as the first-ever King's College London team to compete at Silverstone.

KCL Quantum Mechanics Society, King's College London

2025 - Present

President

London, United Kingdom

- **Leading** the society, overseeing events and initiatives to expand student engagement in quantum physics.
- **Coordinating** committee activities, including problem classes, discussion groups, and book sessions.
- **Organising** academic and social events, balancing learning with community-building opportunities.
- **Fostering** collaboration across year groups and shaping the society's long-term vision while supporting the committee in day-to-day operations.

ACHIEVEMENTS

The Duke of Edinburgh's Award Gold	2024
Residential certificate course in Chalet Cooking at The Orchards School of Cookery	2023
British Physics Olympiad, Experimental Project Silver Award	2020

VOLUNTEERING

The Big Half 2023

2023

London, United Kingdom

Ran the London half marathon (The Big Half 2023), raising funds for Explorers Against Extinction. This event challenged my endurance and allowed me to contribute to conservation efforts.

HOBBIES

Piano(10 years), samba band (Caixa, 2 years), tennis(17 years), badminton(13 years), cricket(5 years), casual gaming(18 years), sim racing(3 years), hiking(7 years) and long-distance running(8 years). I follow Formula 1, tennis, and cricket. Strong interest in reading, particularly science books and personal development books. Also, maintain a regular gym routine(3 years).