# Arnav Avad

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Highly motivated Master's student with an interest in quantitative analysis using computational methods accompanied by an ambition to succeed in a research environment. Currently developing an eigenmode analysis standardised package extension for micromagnetics software, Ubermag.

## Education

**Imperial College London**
*Master's of Science in Applied Computational Science and Engineering* — *Oct. 2022 – Oct. 2023*
**Distinction**

**King's College London**
*Bachelor of Science in Physics with Theoretical Physics* — *Sep. 2019 – Jul. 2022*
**First Class Honours**

**Southend High School for Boys**
*A-Levels and AS-Levels* — *Sep. 2017 – Aug. 2019*
**A-Levels:** 1 A*, 2 A including Further Mathematics and Physics
**AS-Levels:** 5 A including Mathematics, Physics and Extended Project Qualification

**Southend High School for Boys**
*GCSEs* — *Jan. 2015 – Aug. 2017*
4 A*, 6 A and 2 B

## Experience

**Postgraduate Presenter** — September 2023
*IEEE Magnetics AtC-AtG Conference*
- Poster presentation of Master's thesis.

**Tutor - GCSE, A-level** — March 2020 – Ongoing
*MyTutorWeb Ltd* — *3 Fashion St, Spitalfields, London, E1 6PX*
- Improved my communication skills by explaining topics to others in order to help them understand.
- Allowed me to organise each lesson to enhance the productivity of the tutoring.

## Projects

- Master's Thesis - Eigenmode Analysis of Topologically Stable Quasi-particles using Computational Magnetism.
- Bachelor's Thesis - Investigation into Water-Ice Simulation Models for QLL Analysis.
- Genetic Algorithm for Optimal Chemical Process Circuit using C++.
- Image Manipulation using C++ for Convolutional Edge Detection, Blurring and Slicing.
- Fluid Dynamics using Iterative techniques using Python, C++ and MPI Parallelism.
- Comparison between conditional GAN and VAE Neural Networks.
- Data Wrangling for Linear Regression and other ML techniques.
- Travelling Salesman Problem using Simulated Annealing.
- Tacoma Bridge modelling using simplistic coupled Ordinary Differential Equations.

## Skills

Python Programming
C++ Programming
Mathematic Modelling
Git
Github Workflows
Machine Learning Frameworks
Deep Learning Framework (Pytorch)
OpenMP and MPI Parallelisation
High Performance Computing
Scientific Computing
Bilingual (English and Marathi)

## Hobbies and Interests

Enjoy partaking in sports such as badminton and swimming. Achieved up to grade 6 in piano.

## References

References available upon request.