

Henry Yip

Edinburgh, Scotland

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Third year Mathematical Physics student with strong background in both Mathematics and Physics, with experience in Python Programming. A passionate learner who is willing to take risks. Interested in pursuing physics at a higher level after university, particularly in Classical Mechanics or Differential Geometry.

Education

- BSc Mathematical Physics, The University of Edinburgh (2021-2025) (Year 3)
- Year 3 Course Choices:
 - Geometry, Principles of Quantum Mechanics (Whole Year), Electromagnetism and Relativity (Whole Year), Lagrangian Dynamics, Computer Modelling (Whole Year), Numerical Ordinary Differential Equations, Honours Complex Variables, Thermal Physics (Whole Year)

Academic Achievements

- **Consistent First-Class Performance**
 - Several Variable Calculus and Differential Equations (93 %), Mathematics for Physics 2 (91 %), Introductory Astrophysics (91 %), Introduction to Linear Algebra (89 %), Physics 1A (89 %), Modern Physics (Exam 88 %), Probability (82 %), Fundamentals of Pure Mathematics (Exam 85 %)
- **Pre-Honours Certificate of Merit**
 - Awarded for excellent performance in Year 1 of the BSc Mathematical Physics with a high average first-class mark of **86 %**
- **Active in Programme Representation**
 - Sole Programme Representative for BSc Mathematical Physics in Year 2
 - Programme Representative in Year 1, 2, and 3
 - Met with lecturers to discuss course/exam structures. Met with external examiners from other universities in a lunch meeting to explain common student concerns

Projects

- **Research in Edinburgh Scientific Researchers Association (ESRA)**
 - **Research Topic title: Reviewing the Pendulum Model of Water Slosh**
 - We model the behaviour of the fluid slosh at small angles using a double pendulum system (compared to single pendulum system as seen in literature).
 - Working with 4 undergraduates, from both School of Math and School of Physics and Astronomy. Improved Numerical Analysis Skills and Problem-Solving Techniques, especially

in solving complicated classical mechanics problems.

- Henry Yip's Personal Website (<https://henry-yip.github.io/>) (2022-Now)
 - Ongoing project that has required a substantial commitment of approximately 800-1000 hours
 - Short posts on Classical Mechanics, Analysis, Group Theory, etc, offering insights into contemporary Physics and Mathematics, such as (<https://henry-yip.github.io/Dirichlet/>)
 - Expanded upon high-school physics and explained the intuition behind concepts (<https://henry-yip.github.io/HKDSE/>)

Examples of conferences attended

- **In-person talk and lunch with Nobel Prize Laureate - Donna Strickland** (Edinburgh, JCMB building)
- **London Mathematics Society Meeting: Mary Cartwright Lecture 2023** (Edinburgh, Bayes Center)
- **Kelvin Buzzard - Can Computers do your Problem Sheets?** (Edinburgh, Appleton Tower)

Work Experience

- **Mathematics Tutor (Jan 2022-Now) (2 years)**
 - Provided dedicated mathematics tutoring (1-1.5 hrs of online tutoring per week) to high-school student in Hong Kong, delivering exercises and math help through Whatsapp, offering exam feedback. Assisted in F2 (Year 8) Second Semester, F3 (Year 9) Both Semesters, F4 (Year 10) Both Semesters.
- **HYPED Research Team Research Analyst (2022-2023) (1 year)**
 - Assisted in researching vacuum pumps, focusing on the liquid ring pump as the role of a Research Analyst. (<https://www.hyp-ed.com/people/hyped-people-2022-23>)
 - Joined weekly meetings within the Research Group and the whole HYPED team to understand the progress of the team, as well as giving my progress regarding my research.
- **HYPED Outreach Team Coordinator (2021-2022) (1 year)**
 - Contributed to conference preparation, delivered physics and Hyperloop concepts to high school students as the role of a Outreach Team coordinator (<https://www.hyp-ed.com/people/hyped-people-2021-22>)
 - Joined weekly meetings to discuss conference preparations (such as naming conferences, assist in drafting emails, etc)