

# Ananya Ganapathy

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## Summary:

Dedicated 4th Year Astrophysics student with experiences focusing on research, programming and outreach. Skilled at problem solving and data analysis, I seek to integrate physics and technology to broaden the scope of our understanding of the universe.

## Education:

**University of Edinburgh:** BSc (Hons) Astrophysics September 2021 – May 2025

- First year courses: Mathematics for Physics 1 & 2, Physics 1A and 1B, Astrobiology, and Introductory Astrophysics.
- Second year courses: Linear Algebra and Several Variable Calculus, Modern Physics, Programming and Data Analysis, Economic Principles, Dynamics and Vector Calculus, Physics of Fields and Matter, Experimental Physics, Computer Simulation
- Third year courses: Observational Astronomy, Fourier Analysis and Statistics, Numerical Recipes, Electromagnetism, Quantum Mechanics, Research Methods in Physics, Thermal Physics

**Indus International School Bangalore:** IBDP August 2019 – May 2021

- Secured a 41/45 in the International Baccalaureate Diploma Program (IBDP) exam with a 7 in Math AA HL and Physics HL and 34/36 in Physics Extended Essay
- Subjects taken: Math Analysis and Approaches HL, Physics HL, Chemistry HL, Economics SL, French Ab Initio, English Language and Literature SL

**Arya Vidya Mandir, Bandra West:** ICSE April 2006 – March 2019

- Secured 97.5% in the Indian Certificate of Secondary Education (ICSE) with a 100% in Mathematics and Technical Drawing

## Experience

**Institute for Astronomy** May 2024 – Present

- Research Intern under Dr. Michael Petersen to use Fourier Laguerre expansions to robustly classify galaxies.
- Funded by the SoPA, this project aims to build a pipeline to expand galaxies and eventually publish a paper which uses the pipeline to explore the evolution of disc asymmetry.

**Endeavor** October 2023 – Present

- As a software engineer for the university's rocketry society, I help program the main flight computer using C++.
- Using my physics background, I lead the team to determine the flight path, flight stage classification and determination.

**SpaceCareers.uk (UKSEDS)** January 2023 – Present

- As part of the events team, I have helped organize events to help bridge the gap between university and the space industry by closely working with students and employers.
- Working with a team of over 50 volunteers to make this the only resource needed for getting a job in the UK space sector.

**University of Edinburgh** March 2022 – Present

- Student Ambassador for the University: responsible for representing the School of Physics and Astronomy and the University to current and prospective students.
- My role includes campus tours/visits, student panels and other events where I share my student experience and help students navigate their way through university.

### **Space4Women Mentorship(UNOOSA) program.**

January 2023 – November 2023

- Organized by the UN Office for Outer Space Affairs (UNOOSA), I was selected as a mentee from more than 500 applicants globally.
- Mentored by Priyanka Roy Chaudhary, this program aims to empower women in the space sector through mentorship.

### **Bellatrix Aerospace**

June 2023 – August 2023

- As a summer intern, I helped conduct satellite market analysis and research projects for the company including competition analysis and research into how 'Open Innovation' can be integrated into the Indian Space Industry.
- Coded different mathematical models to determine the effect of different orbital maneuvers on factors such as propellant mass.
- Helped with the documentation of products and assisted in creating investor pitch decks.

### **Solar System Simulation Project**

March 2023 – May 2023

- Using the knowledge I gained from my 2<sup>nd</sup> year 'Computer Simulation' course, I created a python simulation of the entire Solar System using object-oriented programming.
- Besides this, I added additional features such as calculating the total energy of the system, orbital period and launching a satellite to Mars.
- I also used this to investigate the difference between the Euler and Beeman methods of integration by investigating how different parameters of the Solar System change.

### **Edinburgh University Science Media (EuSci)**

April 2022 – June 2023

- Science writer for EuSci which is the university's science communication group.
- My featured astrophysics articles include those on Planet 9 and Northern Lights.
- My article on Space Junk featured in the November 2022 magazine issue.

### **Tamarind Tree**

July 2022 – August 2022

- I was an Astronomy tutor to the students in Tamarind Tree where I taught a month-long online course called 'Introduction to Astronomy'.
- This course, created by me, was intended to give students basic knowledge of astronomy while giving them activities to develop and explore the subject on their own.
- My objective was to give them exposure to a new subject and kindle their interest in astronomy.

### **Edinburgh Scientific Research Association**

November 2021 – June 2022

- Was a Researcher at this student-run society where we undertook a project to determine the age of a star cluster
- Used data collected from the Royal Observatory Telescope at Edinburgh (ROE) and Python for data analysis.
- Due to old telescope equipment at ROE, we were unable to collect factual data and hence couldn't publish our research.

## **Honours and Awards**

### **Certificate of Merit – Pre Honours**

December 2023

University of Edinburgh

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### **Academic Captain**

April 2020 – May 2021

Indus International School Bangalore

### **Young Achiever Award**

February 2020

Indus International School Bangalore

### **Arya Kumari Award**

June 2019

Arya Vidya Mandir, Bandra West

### **High Achiever in ICSE exams**

June 2019

Arya Vidya Mandir, Bandra West