

# Ewan Chamberlain

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## Education

### University of Cambridge, Robinson College

10/2019 – 07/2023

*MSci in Astrophysics*

*1st Class with Distinction*

*BA (Hons) in Natural Sciences*

*1st Class*

### King Edward VI School

09/2012 – 07/2019

*A-Level Mathematics, Further Mathematics, Physics, Chemistry*

*A\*A\*A\*A\**

## Projects

### Powerful AGN outflows at cosmic noon can solve the S8 tension?

10/2022 – 05/2023

*Master's Project*

- Explored powerful AGN outflows from supermassive black holes to see if these can help solve the  $S_8$  tension, a prominent problem in cosmology.
- Reviewing literature around baryonic effects on the matter power spectrum.
- Running simulations and analysing and transforming simulation data of over 100 million particles in Python on a large computer cluster.
- Presented project findings in a 20 minute presentation and in a 30 page report.

### CATAM II

10/2021 – 05/2022

*Part II Astrophysics Computational Projects*

- Completed two independent computational projects in MATLAB about different areas in Astrophysics.
- **Cosmological Distances:** Computed distances as functions of redshift in different cosmologies, and comoving volumes of 114 quasars.
- **Accretion Disks:** Evolved an accretion disk orbiting a massive object for 10 million time steps.

### Introduction to Computing

01/2021 – 03/2021

*Part IB Physics B Course*

- Self-lead C++ course, learning through weekly projects. Projects of note are:
- Plotted the trajectory of different hyperbolic orbits and created a movie of the orbits.
- Calculated the evolution of 100 particles compressed by a piston.

## Experience

### Webmaster

06/2022 – 06/2023

*Robinson College Video Game Society*

- Updated society website with HTML by connecting to a remote server with SSH.
- Built and maintained multiplayer games on a remote Linux server using Bash scripting.
- Organised weekly society meetings with the rest of the committee.

### Finance Assistant

Intermittent 07/2019 – 09/2022

*Calor Gas*

*Warwick, United Kingdom*

- Performing a range of tasks in the Financial and Accounts Payable teams.
- Processed an average of over 100 invoices each day with DocuSphere, and tank transfers with EnterpriseOne.

### Treasurer

10/2021 – 03/2022

*Cambridge University Karate Club*

- Maintained treasury and accounts for the club using automated Excel spreadsheets.
- Implemented a Python script to automate creating invoices for ~100 members, saving over 2 hours per term.
- Presented a summary of the accounts and a forecast into the nearby future at the Annual General Meeting.

## Skills and Awards

**Technologies:** Linux, Jupyter, Microsoft Office (Word, Excel, PowerPoint), SSH, HPC, Git

**Programming Languages:** Python (Numpy, Matplotlib, Pandas), C++, MATLAB, Bash, LaTeX

**Foreign Languages:** Spanish (intermediate, GCSE A\*)

**Public Speaking:** LAMBDA Gold, Grade 8

Robinson College Prize and College Scholarship.

## Other Interests

**Karate:** 2nd Dan black belt, competed for University team at national competitions. Instructor for the University club.

**Piano:** Grade 3, Trinity College