Jack Lloyd-Walters

FRAS

Contact

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Programming

- ♥ Python — Expert
- Javascript — Advanced
- LaTeX — Advanced
- Markdown — Advanced
- HTML/CSS — Intermediate
- Kerboscript — Intermediate
- Lua — Intermediate
- Fortran — Intermediate
- Assembly — Mediocre
- C# — Mediocre
- C — Beginner
- RPython — Beginner

Languages

- English — Mother tongue
- Japanese — Beginner

Profile

Final year Masters student with a passion for Python programming, exoplanetary science, gravitational wave astronomy, and the Japanese language. Looking to begin a career in computational physics, focusing primarily on astronomical research or spacecraft operations.

Education

2018 – Now **MPhys (Hons)** in Physics, Astronomy, and Cosmology — University of Portsmouth

- First year average mark: 76.6%
- Third year BSc project using computational signal processing techniques to differentiate Gravitational Mergers from Glitches in the LIGO Data-set. Utilised research skills to produced a 4000 word dissertation summarising the results.

2016 – 2018 **A-Level** in Physics (A), EPQ (A), Maths (B), Further Maths (D) — Peter Symonds College

- EPQ in Exoplanetary study of TRAPPIST-1
- Additional AS-Level (A) in Chemistry

2011 – 2016 **9 GCSEs** Grades A* to B — City of Portsmouth Boys School

Including Physics, Maths, English, and Computer Science

Work

2017 – 2019 **Floor Staff** — B&M

- Managed fast moving customer goods primarily, seasonal stock for the four months leading up to the new year secondarily.
- Managed other store areas at request, requiring up-to-date knowledge of most of stock.
- Dealt with stock deliveries on most days and organised offloaded pallets in the warehouse daily.
- Coordinated delivery requests for large customer purchases on a biweekly to monthly basis.

Professional Membership

2020 – Now **Fellow** — Royal Astronomical Society

2020 – Now **Member** — European Astronomical Society

2018 – Now **Associate Member** — Institute of Physics

Hobbies and Interests

Coding Projects

- Began developing two programing languages, "Skiylia" and "Verbsocript", to better understand how compilers, interpreters, and programming languages as a whole work. Base implementation in Python 3.9 due to familiarity, learning to implement the two in C and RPython respectively to facilitate knowledge of widely used Programming languages, and the many challenges of memory management, garbage collection, and design trade-off.
- Developed watch faces for the Fitbit platform for personal use using Javascript, the FitBit Cli, and GitFlow. Required understanding of the specific Fitbit Javascript package, knowledge of good UI and UX design, and how to fetch and manipulate data from API endpoints (specifically the OpenWeatherMap).

Gaming

- Kerbal Space Program, a spaceflight simulator, has lead to developing an intuitive understanding of orbital mechanics and mission design. Gained experience writing self-contained autopilot software using the "Kerbal Operation System" mod, dealing with realistic scale N-Body physics from the "Real Solar System" and "Principa" mods, and using external tools such as GMAT to analyse all manner of orbital transfers and mission plans.
- Factorio, a factory building game with a focus on logistics and optimisation. Led to the development a good understanding of efficient design practices, scalability, problem solving, and optimisation, all of which directly influenced abilities in other areas.

Skills

Programming Excellent knowledge of programming, with nearly 12 years of experience in Python. Decent familiarity with Unix systems due to using Ubuntu as the primary Operating System on personal machine.

Language Picked up Japanese during lockdown, and since joined a Japanese language course at university. Aiming to pass the JLPT N5 (Japanese Language Proficiency Test Level 5) by summer of 2022.

Office Proficient with Excel, Jupyter, and Overleaf for office workloads, specifically with the methods required to manipulate data and write research papers.