

STEPHEN CHARLES

OVERVIEW

PORTFOLIO Proficient *pythonista* with a background in mathematics and computer science. Particular expertise in managing software pipelines and large data sets involving time series analysis and machine learning algorithms, in addition to interpersonal skills from a range of hospitality roles.

DATA CAMP

GIT HUB

EMPLOYMENT

2022 – Now **Innovative Technologies** – Manchester

POSITION *Machine Learning Engineer, Placement*

STACK *Python, Pytorch, Keras, Tensorflow, Numpy, Pandas, Sklearn, Git, Bash*

DUTIES

- **ICU** performs accurate age verification to automate the policy and allow access to age restricted purchases and premises, through an ensemble of convolutional neural networks.
- With AI algorithms developed over many years, ICU offers an accurate (99.88%) precise and affordable facial recognition system.

2019 – 2020 **Facebook (Meta)** – London - Remote

POSITION *Data Scientist, Analytics Intern*

STACK *Tableau, SQL, Python*

DUTIES

- Performed large-scale data analysis to extract useful business insights.
- Identified the ones which were actionable, suggesting recommendations, and influenced the direction of the business by communicating the results to cross-functional groups.
- Classified leads so that the team could work on the most valuable cases, and suggested improvements in the tools and techniques to help scale the team.

EDUCATION

2021 – 2022 **Data Science**, University of Bath

MSC Master of Computer Science

STACK *Python, SQL, Pytorch, Keras, Tensorflow, Numpy, Pandas, Sklearn, Matplotlib, Seaborn*

MODULES

Statistics for Data Science - Probability and statistics, with a focus on translating real-world problems into a mathematical framework in data science contexts.

Machine Learning - Covered both supervised and unsupervised machine learning algorithms from **Bishop**, including how to develop, evaluate and deploy trained models. The second semester involved advanced techniques focused on **neural networks** with both regression and classification.

Reinforcement Learning - Implemented various agents to solve **environments** from **Sutton & Barto**, including Dynamic Programming and Temporal Difference methods.

Bayesian Machine Learning - Employing approaches such as inference and monte carlo.

2020 – 2021 **Astronomy and Astrophysics**, University of Manchester

MSC *Distinction*, Master of Physics

STACK *Python, Numpy, Pandas, Sklearn, Matplotlib, Seaborn, Git, Bash*

RESEARCH Published a program to facilitate the data acquisition and analysis pipeline for **TESS** automatically, dubbed **firefly** (the best Sci-fi show!), which applies nested sampling (**dynesty**) to find best fit variables (**TransitFit**) between the host star and exoplanet.

2016 – 2020 **Mathematics with Computer Science**, University of Nottingham

MMATH *Upper Second-Class Honours*, Master of Mathematics

STACK *C++, Python, R, Numpy, Pandas, Matplotlib, Seaborn*

RESEARCH Dissertation involved working with python to numerically solve spherical cavitation bubble collapse.

2014 – 2016 **Space Engineering**, Loughborough College

A-LEVELS *Mathematics A* · Further Mathematics A · Physics A · Engineering A*

A specialised course focused on Engineering with guest lectures at the Space Centre in Leicester.

GENERAL TECH STACK

LANGUAGE Python, C++, \LaTeX , SQL

PACKAGES Numpy, Pandas, SciPy, AstroPy

ML PACKAGES Sklearn, Tensorflow, PyTorch

WEB HTML, Markdown, CSS

SCIENTIFIC SOFTWARE Matlab, R, Fortran, Mathematica

Microsoft Office, Tableau, Blender

AWARDS AND QUALIFICATIONS

2022 **DataCamp: Data Science Track**

2021 Kaggle Expert

2020 Tableau Desktop Specialist

2016 Full UK Driving Licence

2015 Grade 8 Violin



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PUBLICATIONS

AUTHOR -
CO-AUTHOR [Hayes, J J C, E Kerins, J S Morgan et al. \(2021\)](#) “[TransitFit](#): an exoplanet transit fitting package for multi-telescope datasets and its application to WASP-127 b, WASP-91 b, and WASP-126 b”, 1–14.

ACADEMIC WORK EXPERIENCE

AUTUMN 2018 **Scholarship**, *National University of Singapore*
SCHOLARSHIP Obtained a scholarship to study a crash course in Korean language for 5 weeks and to learn about the culture and history of the changing landscapes of Singapore. Upon completion, applied to spend the Autumn semester here successfully.

JULY 2017 **Physics Outreach**, *The University of Nottingham*
OUTREACH I began, on a voluntary basis, promoting physics via social media which eventually evolved into a paid role in which I mediated with events staff in the department to ensure successful participation. Part of the role was ensuring inclusivity, and how best to target minority groups.

JULY 2014 **Research Intern**, *Space Research Centre, The University of Leicester*
INTERN During my first college year I gained work experience at the University of Leicester Space Research Centre, assisting in the development of an astrobiology rock-sampling tool called [SPLIT](#) for use on Mars.

POSITIONS AND RESPONSIBILITIES

2018 - 2019	Mature Student Mentor , <i>UoN</i> I was a point of contact for mature students, helping them settle, and be there in a support capacity.	2017 - 2018	Ambassador , <i>UoN</i> I presented, and gave advice to prospective students.
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PUBLIC SPEAKING

2017 **Department of Physics**, *The University of Nottingham*
Gave introductions to guest speakers and shout outs in lectures to ensure everyone was informed of important events.

2014 **Space Research Centre**, *The University of Leicester*
Presented my findings to a crowd of 50 post doc students and an astronaut! My presentation was based on exoplanet research and the feasibility of alien civilizations to be space faring.

VOLUNTEERING

2017 **Magical Maths** – *Nottingham*
ROLE Organisation of weekly sessions to promote mathematics to primary school children, in line with the national curriculum.

INTERESTS

PHOTOGRAPHY	Avid adventurer and keen astronomer. This hobby pushes the boundaries of my interest in both.	MUSIC	Self taught Guitar, Piano, Violin.
		GENERAL	Science fiction and anything spacey.
HIKING	Surviving extreme conditions makes me feel alive.		

REFERENCES

NAME	Dr. Eamonn Kerins	Prof. Chris Harris	Dr. John Holt
TITLE	<i>Senior Lecturer</i>	<i>Research Professor</i>	<i>Research Engineer</i>
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	University of Manchester	University of Southampton	University of Leicester
	Department of Physics	Fellow	Department of Physics