Dr David Ellis

LinkedIn: david-john-ellis | **Portfolio**: david-ellis.github.io/ | **GitHub**: David-Ellis

Profile

Astrophysicist turned senior data analyst with strong skills in statistical analysis and data visualisation using Python, R, SQL, and Power BI. Passionate about building relationships with stakeholders to build actionable outputs tailored to user needs. I lead a small team of dedicated analysts working on long-term research projects on the wider determinants of health, development of dashboards monitoring a wide range of key health indicators, and ad-hoc data analytics support requests.

Work Experience

Programme Senior Officer/Statistician | Birmingham City Council | June 2023 - Present

- Develop the team's work plans including long-term research projects and ad-hoc data analytics support requests, monitoring progress, and ensuring outputs are delivered on time.
- Lead stakeholder engagement to ensure that outputs are actionable and future-proof.
- Present statistical results to a wide range of audience types including senior management and external stakeholders.
- Support all stages of the recruitment process including developing training programs tailored to the role to ensure rapid onboarding and development of new team members.
- Founded a multi-organisational Journal Club to embed a culture of cutting-edge learning within the Public Health division and wider Integrated Care System.

Analysis & Data Visualisation Officer | Birmingham City Council | Dec 2021 - June 2023

- Preprocess, analyse and visualise health data (R, Python & SQL).
- Building valuable relationships with internal and external stakeholders.
- Develop tools to enable colleagues to self-serve for common analytical tasks.
- Present statistical results in a variety of formats including technical reports, presentations, and interactive dashboards to a wide range of audience types.

Physics PhD Researcher | Georg-August-Universität Göttingen | Nov 2018 – Nov 2021

- Develop code to analyse simulation data (Python & C++).
- Writing peer-reviewed articles cross-organisation collaboration.
- Present results at international conferences.
- Tutoring bachelor and master students.

Education

Professional Data Analyst | DataCamp **|** April 2023 **|** Online Certificate

Astrophysics PhD | Grade: Magna Cum Laude **|** 2018-2021 **|** Georg-August-Universität Göttingen

Theoretical Physics MSc | Grade: First Class Honors **|** 2014-2018 **|** University of Nottingham

Publications

Papers:

- **Wider Determinants of Birth Outcomes in Birmingham & Solihull.** In preparation.
- **An Analysis of NHS Health Check Attendees in Birmingham**. In preparation.
- **Miniclusters Made Easy**. In: Physical Review D. Vol. 103, No. 083525, 2021. arXiv:2006.08637
- **Structure of Axion Miniclusters**. In: Physical Review D. Vol. 106. arXiv:2204.13187

Other:

- **Thesis: Axion Miniclusters: Formation, Structure and Observational Signatures.** Online publication
- **Dark Matter: Evidence, Theory, and Constraints (Textbook).** To be published this year by Princeton University Press.

Conferences

- **Hidden Inequality: The Importance of Accurate Ethnicity Recording and Rigorous Reporting** - Global Communities, Local Challenges, Partnership Solutions **-** YouTube Recording
- **Minicluster Formation and Microlensing -** QUARKS 2020 - YouTube Recording
- **Understanding Axion Miniclusters** - Sixteenth Marcel Grossman Meeting – YouTube Recording
- **Axion Miniclusters: Formation and Observational Signatures -** Cosmo21 **-** Online poster

Projects

- **BSol.mapR** – R package to streamline the production of heat maps for Birmingham and Solihull.
- **reg-vis** - Python Module for quickly visualising regression results in an easy-to-interpret format.
- **ps-toolkit -** Astrophysics Python module - for calculating the 1D-matter-power-spectrum using the Press-Schechter formalism.
- **How's My NHS?** Website to present publicly available hospital performance data. The HTML and JavaScript code were generated automatically, and the data scraped from the internet using Python.
- **Portfolio** – For a full list of projects, please see my online portfolio.

Programming Skills

- **Python -** Expert
- **R -** Expert
- **HTML -** Intermediate
- **LaTeX -** Intermediate
- **CSS -** Intermediate
- **SQL -** Intermediate
- **Excel -** Intermediate
- **JavaScript -** Basic/Intermediate
- **C++ -** Basic
- **PowerBI -** Basic

Languages

- **English** - Native
- **German** - B2