Emily L. Hunt – Curriculum Vitae

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Research Profile

Astronomer with interests in machine learning and statistics. Highly skilled programmer with 10+ years of programming experience. During my Ph.D., I used Gaia data and various machine learning techniques to create the largest ever catalogue of star clusters in the Milky Way. I am looking to work on exciting and challenging data analysis projects.

Employment

2023 – 2024: Postdoctoral researcher, Heidelberg University

Education

2023 – Ph.D. in Astronomy

Heidelberg University, Germany (IMPRS-HD Graduate School)
Thesis: "Improving the census of open clusters in the Milky Way with data from *Gaia*"
Advisor: S. Reffert

2019 – M.Phys. Physics with Astronomy

University of Bath, United Kingdom
Thesis: "Inference of photometric galaxy redshifts with a mixture density network"
Advisor: S. Wuyts

Publications

3. **Hunt, Emily L.** and Reffert, Sabine (in prep.). "Improving the open cluster census. III. The masses and dynamics of open clusters in the Milky Way".
2. **Hunt, Emily L.** and Reffert, Sabine (2023). "Improving the open cluster census. II. An all-sky cluster catalogue with Gaia DR3". A&A, 673, A114
1. **Hunt, Emily L.** and Reffert, Sabine (2021). "Improving the open cluster census. I. Comparison of Clustering Algorithms applied to Gaia DR2 Data". A&A, 646, A104

Selected Presentations

Königstuhl Colloquium, MPIA, Germany 09/23

* = invited; ⁺= outreach.

Workshops Attended

CZS school on Scientific Machine Learning in Astrophysics, Heidelberg, 2023
GaiaUnlimited Community Workshop, Heidelberg, 2022
dotdotAstronomy, 2022

Awards

University of Bath IMI Undergraduate Research Internship (funded), 2018
Project: De-reddening Cepheid variable stars with a Bayesian inference method
Advisor: V. Scowcroft
Funding: £2000

Teaching

Astronomy Lab Course, Heidelberg University, 2021
Introduction to Astronomy I, Heidelberg University, 2020

Community Service

Conferences and workshops

SOC for .Astronomy 12, New York (2023)
Led session on open cluster selection functions at GaiaUnlimited 2022

Open-source software

Developing a new open cluster analysis Python package for publication in 2023
Developer of astronomy community feeds on Bluesky social network

Relevant expertise

Programming languages

Python: expert (e.g. numpy, tensorflow, emcee)
C/C++: intermediate
JavaScript: intermediate (Svelte, SvelteKit)
Java: basic

Tools and scripting languages

Git/GitHub: expert
LaTeX: expert
HTML/CSS: intermediate
ADQL/SQL: basic

Languages

English: native speaker
German: intermediate