

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 applications of machine learning to large astronomical datasets such as Gaia, Vera Rubin, and JWST surveys.

Education & Employment

2023-2024, Postdoc, Heidelberg University, Germany

Ph.D. 2023, Heidelberg University, Germany

Thesis: “Improving the census of open clusters in the Milky Way with data from Gaia”

Advisor: S. Reffert

M.Phys. 2019, University of Bath, United Kingdom

Thesis: “Inference of photometric galaxy redshifts with a mixture density network”

Advisor: S. Wuyts

Publications

ADS search 🔗

3. **Hunt, Emily L.** and Reffert, Sabine (Submitted). “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 (24 citations)**
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 (57 citations)**

Selected Presentations

Talk , From star clusters to field populations – Florence, Italy	(upcoming) 2023
Seminar , CEFCA – Teruel, Spain (online)	2023
Talk , .Astronomy 12 – Flatiron Institute, New York, NY, USA	2023

Colloquium , Königstuhl Colloquium – MPA, Heidelberg, Germany	2023
Talk , National Astronomy Meeting – Coventry, England, UK	2022
Invited talk , EAS (SS34) – Valencia, Spain	2022
Talk , EAS (SS24) – Valencia, Spain	2022
Talk , EAS (SS15) – Valencia, Spain	2022
Talk , LGBTQ+ STEMinar – University of Glasgow, Scotland, UK	2022
Seminar , Galaxy group – ARI, Heidelberg, Germany	2021
Seminar , Astronomy group – University of Hertfordshire, England, UK	2021
Talk , Star Clusters: The Gaia Revolution	2021
Invited talk , EAS (S32) – Leiden, Netherlands	2021
Talk , EAS (S15) – Leiden, Netherlands	2021
Seminar , SFB 881 – Heidelberg, Germany	2021
Seminar , Gaia group – University of Vienna, Austria	2021
Seminar , Astronomy group – University of Bath, England, UK	2020
Seminar , Milky Way group – MPA, Heidelberg, Germany	2020

Selected Outreach

Invited talk – OUTER SPACE, Max Planck Institute for Astronomy	2023
Interviewed for article – Space.com	2021
Interviewed for article – Thrillist.com	2020
Radio interview – Deutschlandfunk (public radio) & Neue Zürcher Zeitung	2020

Open-source software

Bluesky Astronomy feeds – lead developer of **astronomy community feeds** on Bluesky social network, which are used daily by hundreds of astronomers to interact

ocelot – lead developer of an upcoming open cluster analysis Python package

Workshops Attended

From star clusters to field populations – Florence, Italy	(upcoming) 2023
.Astronomy 12 – Flatiron institute, New York, NY, USA	2023
CZS school on Scientific Machine Learning – Heidelberg, Germany	2023
GaiaUnlimited Community Workshop – Heidelberg, Germany	2022
..Astronomy – online	2020

Awards

Ernst Patzer Award for an excellent publication	€2000 – 2023
University of Bath IMI Undergraduate Research Internship	£2000 – 2018

Teaching & Supervision

Astronomy Lab Course , Heidelberg University	2021
Introduction to Astronomy I , Heidelberg University	2020
Co-supervisor of MSc student , Heidelberg University	2020-2021

Meeting organization & service

SOC for .Astronomy 12	2023
Project leader at CZS school on Scientific Machine Learning in Astrophysics	2023
Session leader at GaiaUnlimited Community Workshop	2022
Reviewer for A&A	ongoing

Relevant expertise

Programming languages

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

Tools and scripting languages

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

Languages

English: native speaker
German: intermediate