

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. **Emily L. Hunt** and Sabine Reffert (Submitted). “Improving the open cluster census. III. The masses and dynamics of open clusters in the Milky Way”.
2. **Emily L. Hunt** and Sabine Reffert (2023). “Improving the open cluster census. II. An all-sky cluster catalogue with Gaia DR3”. [A&A, 673, A114](#) (25 citations)
1. **Emily L. Hunt** and Sabine Reffert (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

Awards

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

Teaching & Supervision

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

Meeting organization & service

SOC for .Astronomy 13	2024
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

Workshops Attended

From star clusters to field populations – Florence, Italy	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

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