

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.

Education & Employment

Postdoctoral researcher, Heidelberg University 2023 – 2024

Ph.D. in Astronomy 2023

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

M.Phys. Physics with Astronomy 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 (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

Colloquium , Königstuhl Colloquium – MPIA, Heidelberg, Germany	09/2023
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 , 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 , University of Vienna, Austria	2021
Seminar , University of Bath, England, UK	2020
Seminar , Milky Way group – MPIA, Heidelberg, Germany	2021

* = 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 & Supervision

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

Community Service

Conferences and workshops

SOC for .Astronomy 12, New York	2023
Project leader at CZS school on Scientific Machine Learning in Astrophysics	2023
Session leader at GaiaUnlimited (open cluster selection functions)	2022

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 a new open cluster analysis Python package for publication in 2023

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