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 (12 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

Seminar, CEFCA – Teruel, Spain (online)	(upcoming) 2023
Talk, .Astronomy 12 – Flatiron Institute, New York, NY, USA	(upcoming) 2023
Colloquium, Königstuhl Colloquium – MPIA, Heidelberg, Germany	(upcoming) 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 – MPIA, Heidelberg, Germany	2020

Workshops Attended

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

Press

Space.com article contribution – journal name change policies	2021
Thrillist.com article contribution – LGBTQ+ outreach	2020
Neue Zürcher Zeitung (NZZ) radio interview – about Gaia EDR3	2020

Awards

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

Community Service

Conferences and workshops

SOC for .Astronomy 12   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 an upcoming open cluster analysis Python package

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