Emily L. Hunt – Curriculum Vitae

emily.hunt.physics@gmail.com emily.space github.com/emilyhunt

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 (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
(15 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
(56 citations)

Selected Presentations

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

Colloquium, Königstuhl Colloquium – MPIA, 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 – MPIA, 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 – Neue Zürcher Zeitung (NZZ) 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