# 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 (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
   **(18 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) | (upcoming) 2023 |
| **Talk,** .Astronomy 12 – Flatiron Institute, New York, NY, USA | 2023 |

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| **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

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| **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

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|---|---|---|
| **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

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

## Teaching & Supervision

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| **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

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|---|---:|
| **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