

EDUCATION

- Northeastern University** Boston, MA
Bachelor of Science Applied Physics 09/21 - (Expected) 06/25
- Northeastern University** Boston, MA
Bachelor of Science Mathematics 09/21 - (Expected) 06/25

PUBLICATIONS

JOURNALS | FIRST OR LEAD AUTHOR

- Edward Berman**, Jacqueline McCleary, “ShOpt.jl : A Julia Package for Empirical Point Spread Function Characterization of JWST NIRCam Data” : Submitted to The Journal of Open Source Software (JOSS). <https://arxiv.org/abs/2310.00071>
- Edward Berman**, et al., “Efficient and Trustworthy PSF Modeling with ShOpt.jl: A Benchmarking Study for JWST NIRCam Imaging” : In Preparation for The Astronomical Journal

ARXIV PREPRINTS

- Noah Shinn, Federico Cassano, **Edward Berman**, Ashwin Gopinath, Karthik Narasimhan, Shunyu Yao, “Reflexion: Language Agents with Verbal Reinforcement Learning”: <https://arxiv.org/abs/2303.11366>

Google Scholar: [\[Link\]](#)

Orcid: <https://orcid.org/0000-0002-8494-3123>

SOFTWARE (ASSOCIATED WITH PUBLICATIONS)

- ShOpt.jl**: Lead Developer [\[Official Website\]](#) [\[MIT License\]](#) [\[Code\]](#)
- PSF Comparison Toolkit**: Developer Co-Lead [\[MIT License\]](#) [\[Code\]](#)
- Reflexion**: Project Collaborator [\[MIT License\]](#) [\[Code\]](#)

EMPLOYMENT

- McCleary's Group, Northeastern University** Boston, MA
Astrophysics Research Co-op | Advised: Prof. Jacqueline McCleary 07/23 - 12/23
- McCleary's Group, Northeastern University** Boston, MA
Research Assistant 01/23 - 07/23
- Northeastern Summer Math Research Program (NSMRP)** Boston, MA
REU | Mentor: Alon Duvall 05/23 - 07/23
- Air Force Research Laboratory | Information Directorate** Rome, NY
Contract | Mentor: Dr. Qing Wu 06/22 - 08/22
- Griffiss Institute** Rome, NY
VICEROY Intern 06/22 - 08/22

INTERNATIONAL COLLABORATIONS & AFFILIATIONS

- **COSMOS-Web: The JWST Cosmic Origins Survey** PID: [1727](#)
Lensing, Imaging, and Simulations Working Groups 01/23 - Present
- **Cosmology Group | Northeastern University** Leaders: [Prof. Blazek](#), [Prof. McCleary](#)
Affiliated as a part of McCleary's Group 01/23 - Present
- **Gamma Tau AI ($\Gamma\tau$)** Links: [\[GitHub\]](#) [\[Website\]](#)
Researcher 09/23 - Present
 - **Leadership:** GammaTau AI Reading Group Director [\[Paper List\]](#)

HONORS, AWARDS, AND FUNDING

- Physics Research Co-op Fellowship** 07/23-01/24
Northeastern Physics Department
- **Benefits:** 50% cost share up to **\$6500** in support of a full time research position.
 - **Criterion:** Awarded to **one student** per six month co-op cycle based on their proposal and a letter of recommendation from a research advisor.
- PEAK Ascent Award** 05/23-07/23
Northeastern Undergraduate Research and Fellowships
- **Benefits:** Research award for **\$1050** in support of a part-time research position.
 - **Criterion:** Money was awarded for the following proposal: [\[Link\]](#)
- Research and Training Grant** 05/23-07/23
National Science Foundation, Northeastern Mathematics Department and COS
- **Benefits:** Received **\$4500** base stipend for an REU program.
 - **Criterion:** Associated with acceptance into the Northeastern Math REU Program.
 - **Grant Title:** "Algebraic Geometry and Representation Theory at Northeastern University" (DMS-1645877)
- Dean's Scholarship** 06/21 - 06/25
Northeastern University
- **Benefits:** Annual Merit Scholarship worth **\$12000**.
 - **Criterion:** Given to top admitted students to Northeastern University.
- Symposium Travel Grant** August 2022
Griffiss Institute
- **Benefits:** Secured **full travel funding** for a conference talk in Arlington VA.
 - **Criterion:** Selected as one of the top 5 interns out of a class of ~ 20 on the basis of public speaking and research acumen.

PEAK: Project-based Exploration And Knowledge

CONFERENCES AND INVITED TALKS (NOT INCLUDING REGULAR TELECOMS)

INVITED COLLOQUIUM TALKS

- **VICEROY Symposium** Arlington, VA
VICEROY Research Talk August 17th, 2022

CONFERENCES

- **RISE Expo 2024** Boston, MA
Shear Optimization with ShOpt Upcoming
- **Brown SUMS** Providence, RI
Parameter Estimation of the PSF [\[Slides\]](#) March 18th, 2023

CONTRIBUTIONS TO OTHER TALKS

- **COSMOS Team Meeting 2023** Rochester, NY
Empirical Characterization of the NIRCам Point Spread Function [\[Slides\]](#) May 25th, 2023
Contributed Slides to speaker Jacqueline McCleary

TEACHING

- **Northeastern Mathematics Department** Boston, MA
Course Assistant: [MATH 2331](#) (Linear Algebra) Fall 2022

SERVICE

WORKSHOPS

- **How to Read a Research Paper Introductory Workshop** Boston, MA
Lead Organizer March 23rd, 2023
- **L^AT_EX Tutorial Workshop** Boston, MA
Lead Organizer Upcoming

EXTRA CURRICULAR SERVICE | LEADER OR PRIMARY INVOLVEMENT

- **Mathematics Engagement and Mentorship Association** Boston, MA
Secretary 10/22 - 05/24

EXTRA CURRICULAR SERVICE | GENERAL MEMBER OR REPRESENTATIVE

- **Mathematics Diversity and Inclusion Committee** Boston, MA
MathEMA Representative 10/22 - Present
- **COS Student Leadership Council** Boston, MA
General SLC Representative 06/23 - Present

NON ACADEMIC SERVICE

- **Twin Oaks Ice Rink LLC** Morristown, NJ
Volunteer Hockey Instructor Summer 2018

SKILLS

- **Languages:** Julia, Rust, Python
- **Libraries:** Flux, Optim (**Julia**); Astropy, PyTorch, TensorFlow, JAX (**Python**); Burn (**Rust**)
- **Astrophysics Tools:** Source Extractor, DS9, FITSIO, PIFF, PSFex
- **Platforms:** Linux (Arch & Ubuntu), L^AT_EX, git, SLURM