Edward M. Berman

Education

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

Publications

Journals | First or Lead Author

Authors	Paper Title	Journal	Link
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

Authors	Paper Title	Link
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

Software

Name	Role	Repository
ShOpt.jl	Lead Developer	https://github.com/EdwardBerman/shopt
PSF Comparison Toolkit	Developer Co-Lead	https://github.com/EdwardBerman/PSF_Comparison_
Reflexion	Project Collaborator	https://github.com/noahshinn024/reflexion

Employment

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

International Collaborations and Affiliations

- COSMOS-Web: The JWST Cosmic Origins Survey
- Northeastern Cosmology Group
- Gamma Tau AI

Honors, Awards, and Funding

Award Title	Awarding Party	Dates	Benefits	Criterion
Physics Research Co-op Fellowship	Northeastern Physics Department	07/23-01/24	50% cost share up to $6500 in support of a full time research position	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	Northeastern Undergraduate Research and Fellowships	05/23-07/23	Research award for $1050 in support of a part-time research position.	Money was awarded for the following proposal: Link
Research and Training Grant	National Science Foundation, Northeastern Mathematics Department and COS	05/23-07/23	Received $4500 base stipend for an REU program.	Associated with acceptance into the Northeastern Math REU Program. Algebraic Geometry and Representation Theory at Northeastern University" (DMS-1645877)
Dean's Scholarship	Northeastern University	06/21 - 06/25	Annual Merit Scholarship worth $12000.	Given to top admitted students to Northeastern University.

Award Title	Awarding Party	Dates	Benefits	Criterion
Symposium Travel Grant	Griffiss Institute	August 2022	Secured full travel funding for a conference talk in Arlington VA.	Selected as one of the top 5 interns out of a class of about 20 on the basis of public speaking and research acumen.

Teaching

University	Class	Semesters	Location
Northeastern University	Math 2331 Linear Algebra	Fall 2022	Boston, MA

Conferences and Invited Talks

Type	Event	Topic	Location	Date
Invited Colloquium Talks	VICEROY Symposium	VICEROY Research Talk	Arlington, VA	August 17th, 2022
Conferences	RISE Expo 2024	Shear Optimization with ShOpt	Boston, MA	Upcoming
Conferences	Brown SUMS	Parameter Estimation of the PSF	Providence, RI	March 18th, 2023
Contributions to Other Talks	COSMOS Team Meeting 2023	Empirical Characterization of the NIRCam Point Spread Function	Rochester, NY	May 25th, 2023

Service

Category	Role	Organization/Event	Location	Date
Workshops	Lead Organizer	How to Read a Research Paper Introductory Workshop	Boston, MA	March 23rd, 2023
Workshops	Lead Organizer	LaTeX Tutorial Workshop	Boston, MA	Upcoming
Extra Curricular Service (Leader or Primary Involvement)	Secretary	Mathematics Engagement and Mentorship Association	Boston, MA	10/22 - 05/24
Extra Curricular Service (General Member or Representative)	MathEMA Representative	Mathematics Diversity and Inclusion Committee	Boston, MA	10/22 - Present
Extra Curricular Service (General Member or Representative)	General SLC Representative	COS Student Leadership Council	Boston, MA	06/23 - Present
Non Academic Service	Volunteer Hockey Instructor	Twin Oaks Ice Rink LLC	Morristown, NJ	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 and Ubuntu), LaTeX, git, SLURM