

## EDUCATION

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<b>Northeastern University</b> Bachelor of Science Mathematics; Bachelor of Science Applied Physics	Boston, MA 09/21 - 06/25
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## PUBLICATIONS

### ASTRONOMY

- **Edward Berman**, et al. : “Efficient PSF Modeling with ShOpt.jl: A PSF Benchmarking Study with JWST NIRCам Imaging” — Submitted to the Astronomical Journal.  
<https://arxiv.org/abs/2401.11625>
- **Edward Berman**, Jacqueline McCleary.: “ShOpt.jl : A Julia Package for Empirical Point Spread Function Characterization of JWST NIRCам Data” — Conditionally accepted to The Journal of Open Source Software (JOSS), will be published upon the acceptance of the AAS companion paper. <https://arxiv.org/abs/2310.00071>

### AI

- Federico Cassano, Luisa Li, Akul Sethi, Noah Shinn, Abby Brennen-Jones, Jacob Ginesin, **Edward Berman**, George Chakhnashvili, Anton Lozhkov, Carolyn Jane Anderson, Arjun Guha: “Can It Edit? Evaluating the Ability of Large Language Models to Follow Code Editing Instructions”— Submitted to the first annual Conference on Language Modeling
- 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, DATA SETS, AND BENCHMARKS

- ShOpt.jl: [\[Code\]](#)
- COSMOS-Web PSF Diagnostics: [\[Code\]](#)
- Can it edit?: [\[Benchmark\]](#)

## EMPLOYMENT

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|---|-------------------------------|
| • <b>McCleary’s Group, Northeastern University</b><br>Researcher   Advised: Prof. Jacqueline McCleary                 | Boston, MA<br>01/23 - Present |
| • <b>Northeastern Mathematics Department</b><br>Course Assistant: <a href="#">MATH 4571</a> (Advanced Linear Algebra) | Boston, MA<br>01/24 - 05/24   |
| • <b>McCleary’s Group, Northeastern University</b><br>Astrophysics Research Co-op                                     | Boston, MA<br>07/23 - 12/23   |
| • <b>Northeastern Summer Math Research Program (NSMRP)</b><br>REU   Mentor: Alon Duvall                               | Boston, MA<br>05/23 - 07/23   |
| • <b>Northeastern Mathematics Department</b><br>Course Assistant: <a href="#">MATH 2331</a> (Linear Algebra)          | Boston, MA<br>08/22 - 12/22   |
| • <b>Air Force Research Laboratory   Information Directorate</b><br>Contract   Mentor: Dr. Qing Wu                    | Rome, NY<br>06/22 - 08/22     |

- **Griffiss Institute**  
VICEROY Intern

Rome, NY  
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
- **Gamma Tau AI ( $\Gamma\tau$ )** Links: [\[GitHub\]](#) [\[Website\]](#)  
Member 09/23 - Present

## HONORS, AWARDS, AND FUNDING

- **PEAK Summit Award (\$3,000)** 01/24 - 04/24  
Northeastern Undergraduate Research and Fellowships
- **Physics Research Co-op Fellowship (50% cost share up to \$6,500)** 07/23 - 01/24  
Northeastern Physics Department
- **PEAK Ascent Award (\$1,050)** 05/23 - 07/23  
Northeastern Undergraduate Research and Fellowships
- **Research and Training Grant (\$4,500 REU Stipend)** 05/23 - 07/23  
National Science Foundation and Northeastern University
- **Dean's Scholarship (\$12,000 Annual)** 06/21 - 06/25  
Northeastern University
- **Symposium Travel Grant (Reserved for top 5 interns)** August 2022  
Griffiss Institute

PEAK: Project-based Exploration And Knowledge

## CONFERENCES AND INVITED TALKS (NOT INCLUDING REGULAR TELECOMS)

- **Columbia University — Invited Talk** New York, NY  
Efficient PSF Modeling and PSF Benchmarking March 19th, 2024
- **COSMOS 2023** Rochester, NY  
Empirical Characterization of the NIRCам Point Spread Function May 25th, 2023  
Joint with Jacqueline McCleary
- **Brown University — SUMS** Providence, RI  
Parameter Estimation of the PSF March 18th, 2023
- **VICEROY Symposium — Invited Talk** Arlington, VA  
VICEROY Research Talk August 17th, 2022
- **Northeastern University — RISE Expo** Boston, MA  
Shear Optimization with ShOpt Upcoming

## SERVICE AND EXTRA CURRICULARS

- **How to Read a Research Paper Introductory Workshop** Boston, MA  
Lead Organizer March 23rd, 2023
- **GammaTau Weekly Reading Group ([Reading Group Archive](#))** [Hybrid] Boston, MA  
Lead Organizer 10/23 - Present
- **Mathematics Engagement and Mentorship Association ([NU MathEMA](#))** Boston, MA  
Secretary 10/22 - Present
- **Mathematics Diversity and Inclusion Committee** Boston, MA  
MathEMA Representative 10/22 - Present
- **COS Student Leadership Council** Boston, MA  
General SLC Representative 06/23 - Present

# COURSEWORK

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- **PhD Level:** Riemannian Optimization, Optimization and Complexity
- **Masters Level:** General Relativity and Cosmology
- **Advanced Undergraduate:** Advanced Group Theory, Advanced Probability and Statistics, Advanced Linear Algebra