

NABEEL REHEMTULLA

CURRICULUM VITAE

nabeelr@u.northwestern.edu
(734) 272-2463

nabeelr.com
github.com/nabeelre

EDUCATION

<i>Ph.D</i>	Northwestern University Astronomy (Advisor: Adam A. Miller)	<i>In Progress</i>
MS	Northwestern University (GPA: 3.9) Astronomy Integrated Data Science Certificate	2023
BS	University of Michigan - Ann Arbor (GPA: 3.5) Major Astronomy & Astrophysics with Highest Honors Major Interdisciplinary Physics Minor Computer Science	2021

PUBLICATIONS

Rehemtulla, N., et al., 2025, "The BTSbot-nearby discovery of SN 2024jlf: rapid, autonomous follow-up probes interaction in an 18.5 Mpc Type IIP supernova", arXiv e-prints, arXiv:2501.18686

Sharma, Y. et al. incl. **Rehemtulla, N.**, 2024, "CCSNscore: A multi-input deep learning tool for classification of core-collapse supernovae using SED-Machine spectra", arXiv e-prints, arXiv:2412.08601

Rehemtulla, N., et al., 2024, "The Zwicky Transient Facility Bright Transient Survey. III. BTSbot: Automated Identification and Follow-up of Bright Transients with Deep Learning", ApJ, 972, 7

Sharma, Y. et al. incl. **Rehemtulla, N.**, 2024, "Dramatic Rebrightening of the Type-changing Stripped-envelope Supernova SN 2023aew", ApJ, 966, 199

Strotjohann, N. L. et al. incl. **Rehemtulla, N.**, 2024, "Search for Supernova Progenitor Stars with ZTF and LSST", ApJ, 960, 72

Cooper, A. P. et al. incl. **Rehemtulla, N.**, 2023, "Overview of the DESI Milky Way Survey", ApJ, 947, 37

Rehemtulla, N. et al., 2022, "Non-parametric spherical Jeans mass estimation with B-splines", MNRAS, 511, 5536

FIRST-AUTHOR ASTRONOTES

AstroNotes are circulars to the transient astronomy community

Rehemtulla, N. et al., 2025, "Early spectroscopy of SNe 2025ay, 2025mg, and 2025oq autonomously triggered by BTSbot-nearby", TNSAN, 2025-46

Rehemtulla, N. et al., 2024, "ZTF Flexible Weekends: an upcoming experiment to search for infant SNe", TNSAN, 2024-216

Rehemtulla, N. et al., 2024, "BTSbot-nearby: a new program for very rapid autonomous follow-up of young, nearby extragalactic transients found in ZTF data", TNSAN, 2024-140

Rehemtulla, N. et al., 2023, "SN 2023tyk: discovery to spectroscopic classification performed fully automatically", TNSAN, 2023-265

♦ *5th most viewed AstroNote of all time*

AWARDS AND FELLOWSHIPS

Outstanding Student Achievement Award Astroinformatics Conference, Puerto Natales, Chile	2024
2nd prize, Rapid Fire Research 2024 Northwestern University, Department of Physics and Astronomy	2024
1st prize, Visualization Competition (animation) Northwestern University, Computation and Data Exchange (CoDEx)	2024
NASA Illinois Space Grant Consortium Graduate Fellowship (awarded twice)	2023, 2022
Highest Honors in Astronomy & Astrophysics University of Michigan, Department of Astronomy	2021
Chambliss Astronomy Achievement Award American Astronomical Society	2021
Outstanding Undergraduate Poster Michigan Institute for Data Science	2020

TALKS AND PRESENTATIONS

<i>Invited</i> – Talk, LS4 Team Meeting, Evanston, IL	<i>March 2025</i>
Poster, Transients from Space, Baltimore, MD	<i>March 2025</i>
Talk, 245 th AAS Meeting, National Harbor, MD	January 2025
Talk, Astroinformatics 2024, Puerto Natales, Chile	December 2024
Talk, ZTF Supernova Working Group Meeting, (remote)	December 2024
Poster, Rise_Time 2024, West Lafayette, IN	August 2024
Talk, NU Rapid Fire Research, Evanston, IL	May 2024
Talk & Poster, NU Computation and Data Exchange Symposium, Evanston, IL	April 2024
Talk, DESI Team Meeting, Honolulu, HI (remote)	December 2023
<i>Invited</i> – Talk, A3D3 Multi-messenger Astrophysics Monthly Telecon	November 2023
Talk, ZTF Collaboration Meeting, Pasadena, CA	October 2023
Poster, International Conference on Machine Learning, Honolulu, HI	July 2023
Talk, The Transient and Variable Universe, Urbana, IL	June 2023
Talk, CIERA Observers Group Meeting, Evanston, IL	May 2023
Poster, CIERA Science Advisory Board Visit, Evanston, IL	April 2023
Lecture, ASTRON 111 – Introduction to Astrobiology, Evanston, IL	April 2023
Poster, 241 st AAS Meeting, Seattle, WA	January 2023

Talk, DESI Team Meeting, (remote)	June 2021
<i>Invited</i> – Speech, U of M Department of Astronomy Commencement	May 2021
Poster, 237 th AAS Meeting <i>DESI Special Session</i> (remote)	January 2021
Talk & Poster, Michigan Institute for Data Science Poster Symposium	November 2020
Poster, Astronomy Undergraduate Poster Symposium, Ann Arbor, MI	April 2018

TEACHING AND MENTORING

Northwestern University, CIERA

Code/Astro Workshop, Teaching Assistant	Summer 2023
ASTRON 111, Teaching Assistant	Spring 2023
ASTRON 120, Teaching Assistant	Fall 2022
Research Experiences at CIERA for High Schoolers, Project Mentor	Summer 2022
♦ <i>Asher Grossman: Machine learning classification of cosmic explosions</i>	

University of Michigan Department of Astronomy

Academic Success Program, Tutor	Fall 2019
Astronomy Structured Study Group, Co-Facilitator	Fall 2019
♦ <i>Tripled attendance relative to previous years after rehauling curriculum</i>	

Ismaili Center of Detroit (hometown mosque)

Religious Education Center, 7 th & 8 th Grade Teacher	2019 –2020
English as a Second Language Teacher	Summer 2018

LEADERSHIP

Ismaili Center of Chicago (local mosque), Chicago, IL

Professionals Network, Midwest - Board Member	September 2023 – Present
---	--------------------------

Student Astronomical Society, University of Michigan, Ann Arbor

Executive Board, Treasurer	2020 –2021
----------------------------	------------

Ismaili Center of Detroit (hometown mosque), Southfield, MI

Regional Youth Volunteer Co-Facilitator	2018 – 2021
Youth & Sports Board Regional Representative	2020 – 2021

AWARDED TELESCOPE TIME

2025A

PI, MMT Observatory	3 nights
PI, Southern Astrophysical Research (SOAR) Telescope	10 hours
Co-I, Nordic Optical Telescope (two approved programs)	40 hours
Co-I, XMM Newton Space Telescope	~17 hours
Co-I, W. M. Keck Observatory	2 nights
Co-I, Magellan Observatory	1 night

2024B

PI, SEDM-KP	104 hours
Co-I, MMT Observatory	4 nights
Co-I, W. M. Keck Observatory	2 nights

2024A

PI, SEDM-KP	104 hours
Co-I, MMT Observatory	4 nights
Co-I, W. M. Keck Observatory	2.5 nights
Co-I, Very Large Array (<i>Director's Discretionary Time</i>)	~4 hours

2023B

PI, SEDM-KP	104 hours
Co-I, MMT Observatory	4 nights
Co-I, W. M. Keck Observatory	2.5 nights

2023A

Co-I, MMT Observatory	4 nights
-----------------------	----------

WORKSHOPS

DESI MWS Team Workshop 2024	August 2024
• Coordinating and optimizing use of DESI Milky Way Survey data	
Time-Domain Needles in Rubin's Haystack	April 2024
• Time-domain anomaly detection methods for the Rubin Observatory	
Astro Imaging Workshop 2023	July 2023
• Image signal processing methods in astronomical data science	
LSST Data Science Fellowship Program Session 16 (<i>Audited</i>)	September 2022
• Statistics and Bayesian inference	
Zwicky Transient Facility Summer School	July 2022
• Data processing, Bayesian inference, time-series analysis, machine learning	
Code/Astro	June 2022
• Best practices for open-source software development in astronomy	

PRESS

33 total media mentions, total reach of 3.1M

Selected articles featuring "*SN 2023tyk: discovery to spectroscopic classification performed fully automatically*" (Rehemtulla et al. 2023)

- ◆ [Northwestern Now](#), "*First supernova detected, confirmed, classified and shared by AI*"
- ◆ [Space.com](#), "*AI just spotted its 1st supernova. Could it replace human explosion hunters?*"
- ◆ [Gizmodo](#), "*AI Detected a Supernova All on Its Own*"
- ◆ [Dropbox Blogs](#), "*How an AI-powered telescope is helping astronomers sift through the stars*"

Selected articles featuring "*BTSbot: Automated Identification and Follow-up of Bright Transients with Deep Learning*" (Rehemtulla et al. 2024)

- ◆ [Northwestern Now](#), "*Sky survey classifies more than 10,000 supernovae*"
- ◆ [Caltech News](#), "*ZTF Leads to Classification of 10,000 Supernovae*"