

Matej Penciak

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| CONTACT INFORMATION | <i>E-mail:</i> matej.penciak@gmail.com <i>Website:</i> https://mpenciak.net | |
| EMPLOYMENT | Reilabs New York City, NY Software engineer | January 2025 - Present |
| | Argument Computer Corporation New York City, NY Software engineer and cryptographer | May 2022 - November 2024 |
| | Northeastern University Boston, MA Zelevinsky Postdoctoral Fellow | Fall 2019 - Spring 2022 |
| EDUCATION | University of Illinois at Urbana-Champaign, Urbana, IL Ph.D., Mathematics | Fall 2012 - Spring 2019 |
| | University of Rochester, Rochester, NY B.A. Honors Mathematics, B.S. Physics, magna cum laude | Fall 2008 - Spring 2012 |
| TEACHING EXPERIENCE | Northeastern University <i>Instructor of Record</i> <ul style="list-style-type: none">• Math 7363, Topics in Algebraic Geometry: Spring 2021• Math 3150, Real Analysis: Fall 2021• Math 2321, Calculus 3: Spring 2020, Fall 2020, Fall 2021• Math 2331, Linear Algebra: Fall 2019 | Fall 2019 - Spring 2022 |
| | University of Illinois at Urbana-Champaign <i>Teaching Assistant</i> <ul style="list-style-type: none">• Math 124, Finite Math: Spring 2018• Math 221, Calculus 1: Fall 2012, Head TA Fall 2014• Math 231, Calculus 2: Head TA Fall 2015, Spring 2016• Math 241, Calculus 3: Spring 2013 - Spring 2014, Spring 2015, Fall 2017, Spring 2019• Math 415, Linear Algebra: Fall 2018• Rated as excellent by students 7/11 semesters teaching | Fall 2012 - Spring 2019 |
| | University of Rochester <i>Teaching Assistant</i> <ul style="list-style-type: none">• Calculus 1, Algebra 1 Honors, Algebra 2• Quantum Mechanics | Fall 2010 - Spring 2012 |
| | Ross Mathematics Program <i>Junior Counselor</i> <i>Counselor</i> | June - August 2008 June - August 2009/2010/2012 |
| RESEARCH ASSISTANCE AND ASSISTING RESEARCH | Illinois Geometry Lab Graduate Mentor University of Illinois at Urbana-Champaign, Katelyn Leisman Simulating Multi-Soliton Solutions to Non-Linear Wave Equations. | Spring and Fall 2018 |
| | Illinois Geometry Lab Graduate Mentor University of Illinois at Urbana-Champaign, Thomas Nevins Interactive Tools for Integrable Dynamic Systems. | Spring 2019 |

Northeastern Undergraduate Research Mentor **Spring 2020-Summer 2021**
Calculating examples of Quasi-Hamiltonian Reduction.

Leading Undergraduate Learning Lean Seminar **Spring 2022**
Leading undergraduates in mathematics and computer science to contributing to Leanproject's mathlib <https://github.com/mpenciak/Lean-Seminar-Sp2022>.

Co-organizer of the Northeastern Math REU **Summers 2021, 2022**
Helping graduate students organize research groups with a small number of undergrads to work on novel mathematics research.

HONORS AND AWARDS
Kuo-Tsai Chen Prize for Geometry and Analysis, 2017.
Arthur S. Gale Award for Achievement in Mathematics, 2012.

PAPERS IN PREPARATION
Gabriel Barreto, Chi'mèd Künzang, Adrian Hamelink, Arthur Paulino, Matej Penciak. Memoset: Sound functional lookups for mutual recursion.

PUBLICATIONS AND PROJECTS
Martin T. Luu and Matej Penciak. Langlands Parameters of Quivers in the Sato Grassmannian. *Comm. Math. Phys.*, 357(2):775-789,2018.

Matej Penciak. Spectral Description of the Spin Ruijsenaars-Schneider System.
arXiv:math/1909.08107.

Formalization of aspects of homological algebra, commutative algebra, algebraic geometry, and symplectic geometry in Lean 3.

CONFERENCE PRESENTATIONS
Poster "Bispectrality in Calogero Moser and Ruijsenaars Schneider Systems" at Summer School on Geometric Representation Theory. Jul 9-13, 2018. IST Austria.

"Spectral Description of the Ruijsenaars-Schneider System" at AMS Special Session on Modern Trends in Integrable Systems. Oct 20-21, 2018. University of Michigan.

"Spectral Description of the Ruijsenaars-Schneider System" at AMS Special Session on Geometric Methods in Representation Theory. Nov 9-10, 2019. UC Riverside.

"Spectral Description of the Ruijsenaars-Schneider System" at CMS Winter Meeting, session on Algebraic Geometry and Representation Theory. Dec 6-9, 2019.

"Geometric Action-Angle Coordinates for the spin Ruijsenaars-Schneider system" at Workshop on Elliptic Integrable Systems. Mar 7-9, 2021.

INVITED TALKS
Joint CUHK-Harvard-YMSC Differential Geometry Seminar, Fall 2020.

Graduate Algebraic Geometry Seminar at UIUC, Fall 2020.

Algebraic Geometry Seminar at UC Davis, Spring 2020.

London Learning Lean Seminar at UCL, April 2023.

Boston Computation Club, August 2024.

RELEVANT SKILLS
Programming language proficiency - Lean, Rust, Python
Scientific computing libraries - Scipy, Matplotlib, NetworkX
Computer algebra software - Sage, Mathematica, Maple, MATLAB
Markup language proficiency - \LaTeX , Markdown, HTML