

# Luke Bielawski

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## EDUCATION

### University of Illinois at Urbana-Champaign

*Bachelor of Science in Mathematics, Bachelor of Science in Physics*  
*Minor in Computer Science*

Champaign-Urbana, IL

*Expected May 2027*

- Cumulative GPA: 3.98 / 4.0
- Honors & Awards: Chancellor's Scholar, LAS James Scholar, Dean's List
- Relevant Coursework: Linear Algebra, Real Analysis, Smooth Manifolds I & II, Probability Theory (UG, G), Measure Theory, Classical Mechanics I & II, Electrodynamics I & II, Quantum Mechanics, Data Structures

## RESEARCH

### University of Maryland

*(NSF REU) TREND: Collective Behavior*

College Park, Maryland

*June 2025 - August 2025*

- Developing a kinetic equation from a biological model to better understand bacterial behavior
- Proving the existence of solutions using a variety of tools from functional analysis
- Collaborating with faculty and peers to explore computational methods for efficient calculation

### Illinois Institute of Technology

*(NSF REU) SURE: Speedier Simulations*

Chicago, IL

*May 2024 - August 2024*

- Investigated low discrepancy sequences and their application to kernel density estimation
- Researched and implemented quasi-Monte Carlo density estimation with conditioning into QMCPy
- Presented research biweekly for other students and faculty utilizing LaTeX and Beamer

### University of Illinois

*Illinois Mathematics Lab: Linear Poisson Structures and their Cohomology*

Champaign-Urbana, IL

*Jan 2024 - May 2024*

- Calculated Cohomology groups for various linear Poisson structures via power series
- Wrote Python code to automatically calculate Cohomology classes with finite degree power series
- Exhibited findings at Undergraduate Research Symposium and IML Poster Session

## WORK EXPERIENCE

### Varsity Tutors

*Remote Tutor for ACT, SAT, Competition Math*

Arlington Heights, IL

*June 2023 - August 2023*

- Provided individual instruction to 6 students on a weekly basis over a two-month span
- Measured student progress through regular testing, adapting instruction to match individual needs
- Taught content as well as test-taking techniques to best prepare students for their academic goals

### Code Ninjas

*Code Sensei*

Arlington Heights, IL

*June 2022 - Nov 2022*

- Instructed groups of 25 students aged 8-14 on introductory JavaScript, Scratch, and Roblox
- Maintained classroom equipment, offered one-on-one assistance, and operated front desk
- Ran a week-long summer day camp program for students ages 3-8 introducing computer science concepts

## LEADERSHIP EXPERIENCE

### Chi Psi Fraternity

*Scholarship Chair*

Champaign-Urbana, IL

*Dec 2023 - May 2024*

- Facilitated study hours for the brothers to promote productive and consistent study habits
- Offered support and strategizing with academically struggling brothers to best improve
- Coordinated with alumni and brothers on internal scholarships and academic purchases

## ADDITIONAL INFORMATION

**Technical Skills:** Python, C++, MATLAB, Mathematica, Microsoft Excel, Italian

**Academic Interests:** Differential Geometry, Probability Theory, Mathematical Physics

**Other Interests:** Putnam Math Competition, Quantitative Finance, Flute and Music