Alexander Shashkov

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Education

University of California, Berkeley 2025-
PhD in Mathematics.

University of Cambridge 2024-2025
Master of Advanced Studies in Pure Mathematics, graduated with Distinction.
Funded by Churchill Scholarship.

Williams College 2019-2024
BA in Mathematics and Computer Science, GPA 3.94/4.00.
Magna Cum Laude, Highest Honors in Mathematics.

Research Experience

Williams College September 2022 – August 2023
Undergraduate thesis work in analytic number theory under Steven J. Miller.

University of Virginia June 2022 – July 2022
Research in analytic number theory under Ken Ono and Jesse Thorner.

Williams College June 2021 – August 2021
Research in analytic number theory and random matrix theory under Steven J. Miller.

MIT Computer Science and Artificial Intelligence Lab June 2020 – June 2021
Research in applied machine learning under Erik Hemberg and Una-May O'Reilly.

Preprints

1. **Low lying zeros of Rankin-Selberg L-functions**. Submitted.

Publications

2. **On the moments of one-level densities in families of cusp forms in the level aspect** (with Peter Cohen, Justine Dell, Oscar E. González, Geoffrey Iyer, Simran Khunger, Chung-Hang Kwan, Steven J. Miller, Alicia Smith Reina, Carsten Sprunger, Nicholas Triantafillou, Nhi Truong, Roger Van Peski, Stephen Willis, Yingzi Yang). *Algebra & Number Theory*. Accepted.
3. **Modular forms and an explicit Chebotarev variant of the Brun-Titchmarsh theorem** (with Daniel Hu and Hari Iyer). *Research in Number Theory* (2023).
4. **Adversarial agent-learning for cybersecurity: a comparison of algorithms** (with Erik Hemberg, Miguel Tulla, and Una-May O'Reilly). *The Knowledge Engineering Review* (2023).
5. **Limiting Spectral Distributions of Families of Block Matrix Ensembles** (with Teresa Dunn, Henry L. Fleischmann, Faye Jackson, Simran Khunger, Steven J. Miller, Luke Reifenberg, and Stephen Willis). *PUMP Journal of Undergraduate Research* (2022).
6. **Self-similar sets with arbitrary Hausdorff and box-counting dimension**. *The Pi Mu Epsilon Journal* (2021).
7. **Analyzing Student Reflection Sentiments and Problem-Solving Procedures in MOOCs** (with Robert Gold, Erik Hemberg, ByeongJo Kong, Ana Bell, and Una-May O'Reilly). *Proceedings of the Eighth ACM Conference on Learning @ Scale* (2021).

Research Talks

- *Extending support for the centered moments of the low lying zeros of cuspidal newforms*. 34th Automorphic Forms Workshop, March 2022.
- *Extending support for the centered moments of the low lying zeros of cuspidal newforms* (with Simran Khunger). Maine-Quebec Number Theory Conference, October 2021.

- *Limiting Spectral Distributions of Families of Block Matrix Ensembles* (with Teresa Dunn, Henry Fleischmann, and Stephen Willis). Young Mathematicians Conference, August 2021.
- *Analyzing student reflection sentiments and problem-solving procedures in MOOCs.* Eighth ACM Conference on Learning @ Scale, June 2021.

Conferences Attended

Park City Math Institute	July – August 2022
34th Automorphic Forms Workshop	March 2022
Maine-Quebec Number Theory Conference	October 2021
Eighth ACM Conference on Learning @ Scale	June 2021

Awards

NSF GRFP Honorable Mention	April 2025
Rosenburg Prize in Mathematics, Williams College Math Dept.	June 2024
Phi Beta Kappa, Williams College	June 2024
Sigma Xi, Williams College	June 2024
Churchill Scholarship	December 2023
Goldwater Scholarship	April 2023

Other Experience

Teaching Asst.	Math 250 Linear Algebra	Williams College
Teaching Asst.	Math 409 Putnam Seminar	Williams College
Teaching Asst.	Math 383 Complex Analysis	Williams College
Referee	Journal of Number Theory	
Referee	PUMP Journal of Undergraduate Research	
Mentor	Prison Math Project	

Relevant Skills

Languages: English (native speaker), Russian (intermediate)
Programming: C++, Java, Python