

Daniel P. Szabo

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Selected Publications

- Bérczi, Kristóf, Tamás Király, and Daniel P. Szabo. "Multiway cuts with a choice of representatives." *Discrete Applied Mathematics* 379 (2026): 827-839.
- Cai, Jin-Yi, and Daniel P. Szabo. "Bounded Degree Nonnegative Counting CSP." *ACM Transactions on Computation Theory* 16, no. 2 (2024): 1-18.
- Kruse, Jacob, Song Gao, Yuhao Ji, Daniel P. Szabo, and Kenneth R. Mayer. "Bringing spatial interaction measures into multi-criteria assessment of redistricting plans using interactive web mapping." *Cartography and Geographic Information Science* 51, no. 4 (2024): 513-532.

Pending Review

- Bérczi, Kristóf, Karthekeyan Chandrasekaran, Tamás Király, and Daniel P. Szabo. "{s, t}-Separating Principal Partition Sequence of Submodular Functions." *arXiv preprint arXiv:2510.25664* (2025).
- Bérczi, Kristóf, Karthekeyan Chandrasekaran, Tamás Király, and Daniel P. Szabo. "Approximating Submodular Matroid-Constrained Partitioning." *arXiv preprint arXiv:2506.19507* (2025).
- Cai, Jin-Yi, Jacob Kruse, Kenneth Mayer, and Daniel P. Szabo. "A Uniformly Random Solution to Algorithmic Redistricting." *arXiv preprint arXiv:2402.13868* (2024).

Education

PhD in Applied Mathematics
Eötvös Loránd University, 2022-2026 (Expected)
Department of Operations Research

MSc in Computer Science
University of Wisconsin-Madison, 2020-2022

BSc in Computer Science and Mathematics
University of Wisconsin-Madison, 2017-2020

Experience

Medve Matek Volunteer Jan 2023 – Present
MÖK (Mathematics Connects Union)

- Helped create and maintain problem sets for grade school math competitions, and taught topics such as combinatorial optimization and combinatorics at summer camps.

Peer Mentor Jan 2023 – Present
Budapest Semesters in Mathematics

- Helped with assignments and mentor students in the directed reading program, where promising undergraduate students can acquire real research experience.

Teaching Assistant Sep 2024 – Present
Eötvös Loránd University

- Held practicum, created and graded assignments and exams for courses operations research I and II.

Research Assistant May 2020 – May 2022
University of Wisconsin-Madison

- Worked with Dr. Jin-Yi Cai on algorithmic redistricting and computational counting complexity

Tutor, Peer Mentor and Grader Sep 2019 – May 2020
University of Wisconsin-Madison

- Peer mentor for CS577 Algorithms, grader and tutor for Math475 Combinatorics, tutor for Math632 Stochastic Processes

Conferences, Grants, Awards

- Academic Excellence Scholarship recipient (2017-2020)
- Hungarian Diaspora Scholarship (2022-2026)
- MFCS 2022, 2024
- IPCO 2023
- Hungarian Doctoral Students Union member