

Márton Péter Szőke

Place and Date of Birth: Budapest, March 18, 1996

E-mail: szokemp@math.bme.hu

Website: math.bme.hu/~szokemp/en

Profiles: [MTMT](#), [Google Scholar](#)



Education

- 09/2021 – 08/2026** **PhD in Mathematics**
Budapest University of Technology and Economics
Dissertation: Dynamic random graphs with inhibition (Supervisor: Balázs Ráth)
- 09/2018 – 07/2020** **MSc in Mathematics**
Budapest University of Technology and Economics
Grade: excellent with honors
Thesis: On the endogeneity of a frozen percolation model with discrete freezing times
- 09/2015 – 06/2018** **BSc in Mathematics, Applied Mathematics specialization**
Budapest University of Technology and Economics
Grade: excellent with honors
Thesis: Markov chains and eigenvalues

Professional Experience

- 09/2026 –** **Budapest University of Technology and Economics;**
Department of Stochastics
Assistant Lecturer
- 09/2021 – 08/2026** **HUN-REN Alfréd Rényi Institute of Mathematics**
Assistant Research Fellow
Research groups: Dynasnet, Noise Sensitivity
- 09/2021 – 12/2025** **Budapest University of Technology and Economics;**
Department of Stochastics
Teaching Assistant for BSc programs in Civil Engineering and Electrical Engineering
Topics: differential equations, linear algebra, multivariate analysis, numerical series, probability theory
- 09/2016 – 05/2023** **Budapest University of Technology and Economics;**
Departments of Algebra, Analysis, Differential Equations, Stochastics
Course Assistant for BSc programs in Mathematics and Physics, and MSc programs in Applied Mathematics and Electrical Engineering
Topics: calculus, differential equations, linear algebra, operations research, probability theory, programming exercises for theory of algorithms, stochastics, stochastic analysis
- 08/2019 – 08/2021** **Morgan Stanley; Model Risk Management, Internal Model Methods**
Analyst (08/2020 – 08/2021), Intern (08/2019 – 07/2020)

Skills and Competencies

Programming & Software: Python (Jupyter Notebook), R, SQL, LaTeX (Overleaf), Matlab, Octave, AMPL, Git (Bitbucket, GitHub), Jira, Microsoft Office

Languages: Hungarian (Native), English (Intermediate, B2)

Publications

2026 B. Ráth, M. Szőke: *Critical time of the almost 2-regular random degree constrained process*, Acta Mathematica Hungarica, accepted for publication.

2026 B. Ráth, M. Szőke, L. Warnke: *Local limit of the random degree constrained process*, Electronic Journal of Probability, 31, 1–65.

2022 B. Ráth, J. M. Swart, M. Szőke: *A phase transition between endogeneity and nonendogeneity*, Electronic Journal of Probability, 27, 1–43.

Research Grants and Scholarships

2025–2026 Pre-doc Scholarship (HUN-REN Alfréd Rényi Institute of Mathematics)

2022–2026 NRDI (NKFIH) Grant No. 142124 – Random graphs and interacting particle systems (Co-researcher)

2024–2025 ERC Synergy Grant No. 810115 – DYNASNET (Research Group Member)

2021–2025 HUN-REN–BME Stochastics Research Group (Contracted Researcher)

2021–2024 ERC Consolidator Grant No. 772466 – NOISE (Research Group Member)

2019–2022 NRDI (NKFIH) Grant No. 123962 – Large-scale behavior of random spatial processes and interacting particle systems (Co-researcher; previously Student Researcher)

Conference and Seminar Talks

2026 *The Brownian Separable Permuton* (Permuton Research Group Seminar, Budapest)

2025 *Random Degree Constrained Process: Local Limit, Its Applications and Some Open Questions* (Kutzem, Budapest)

2025 *Local Limit of the Random Degree Constrained Process* (ELTE Probability Theory and Statistics Seminar, Budapest)

2024 *Local Limit of the Random Degree Constrained Process* (UC San Diego Probability Seminar, online)

2022 *A phase transition between endogeneity and nonendogeneity* (Graphs, Groups, Stochastic Processes Workshop, Budapest)

Selected Seminar and Workshop Attendance

2026 Permuton Research Group Seminar, Budapest

2025 Activated Random Walk focused workshop, Budapest

2024 16th Emléktábla Workshop – Matroid Theory, Vác

2024 Dynasnet Workshop, Visegrád

2024 Noise Sensitivity Workshop, Budapest

2023 Focused Workshop on Networks and Their Limits, Budapest

2022 Forest Fire Mini Workshop, Budapest

2022 Graphs, Groups, Stochastic Processes Seminar, Budapest

Mentoring

- 2024–2026** Mentoring Applied Mathematics MSc students
2023 Internal Advisor for a BSc thesis in Mathematics (BME)

Other Projects

- 2025** *A functional central limit theorem for μ -random permutations* (unpublished research)
2025 *Region-disjoint paths on the torus* (unpublished research)
2023 *Vertex copy model* (unpublished research)
2021 *Frozen percolation on the hypercube* (unpublished research)
2020 DAC - Sport Analytics On-line Hackathon
2020 Sports Data Analytics (statistical tests, clustering, correlation)
2019 *Frozen percolation on the binary tree is nonendogenous* (running simulations)
2019 Analysis of university students' data using statistical tests and regression models

Awards and Competitions

- 2025** Top 100 Instructors Award (BME, Fall 2024)
2015 Babits Award (Board of Education of Babits Mihály Grammar School)
2014, 2015 Ugró Gyula Student Scholarship (District Assembly of Újpest)
2010, 2015 Excellent Student of Újpest Award (District Assembly of Újpest)
2006–2014 Various top placements in national mathematics and physics competitions (Arany Dániel 1st place, Kenguru 1st, 2nd and 3rd places, OKTV 28th place, Varga Tamás 3rd prize, Zrínyi Ilona 1st place, Öveges József 3rd prize)