Curriculum Vitae

Zsolt Bartha

Personal data:

Born:	1990, Budapest, Hungary
Citizenship:	Hungarian

Contact Information:

Eindhoven University of Technology
Department of Mathematics and Computer Science
P.O. Box 513, 5600MB, Eindhoven, the Netherlands
Email: z.bartha@tue.nl

Employments:

2020 – Eindhoven University of Technology
Department of Mathematics and Computer Science
Teaching postdoctoral researcher

Education:

2014 – 2020 University of California, Berkeley
Department of Statistics
Statistics PhD Program
Main research topic: random constraint satisfaction problems
Advisor: Nike Sun
PhD award date: 15/05/2020

2012 – 2014 Budapest University of Technology and Economics (BME)
Faculty of Natural Sciences
MSc in Mathematics
graduated with excellence
Thesis title: Bootstrap Percolation and Noise Sensitivity
Advisor: Gábor Pete

2009 – 2012 Budapest University of Technology and Economics
Faculty of Natural Sciences
BSc in Mathematics
graduated with excellence
Thesis title: Cryptographic Applications of Elliptic Curves
Advisor: Lajos Rónyai

2003 – 2009 Fazekas Mihály Secondary School, Budapest
special mathematics class, excellent matura exam

Areas of interest:

Probability theory, in particular discrete stochastic models, including spreading processes on (stochastic) networks, bootstrap percolation, spin systems, random constraint satisfaction problems, noise sensitivity, random walks

Papers:

Z. Bartha, J. Komjáthy, D. Valesin: *Heterogeneous contact processes*, in preparation

Z. Bartha, J. Komjáthy, J. Raes: *Sharp bound on the truncated metric dimension of trees. Discrete Mathematics* **346**, no. 8 (2023): 113410

Z. Bartha, B. Kolesnik: *Weekly saturated random graphs*, submitted
arXiv:2007.14716

Z. Bartha, N. Sun, Y. Zhang: *Breaking of 1RSB in Random Regular MAX-NAE-SAT. In Proc. 60th FOCS*, pages 1405–1416. IEEE, 2019.
arXiv:1904.08891

Z. Bartha, G. Pete: *Noise sensitivity in bootstrap percolation*, to be submitted
arXiv:1509.08454

Z. Bartha, A. Telcs: *Quenched Invariance Principle for the Random Walk on the Penrose Tiling. Markov Processes Relat. Fields* **20**, 751–767., 2014

Teaching activities:

Eindhoven University of Technology,
Department of Mathematics and Computer Science
Lecturer for:

2021–23 ◦ *Probability and Statistics* (2DL70, for pre-Master students)

Instructor (teaching assistant) for various courses:

2021–23 ◦ *Probability and Statistics* (2DI90, for Bachelor students)
2020–23 ◦ *Probability and Stochastics 2* (2MMS30, for Master students)
2020–23 ◦ *Mathematical Statistics* (2WS30, for Bachelor students)

UC Berkeley, Department of Statistics
Graduate Student Instructor (teaching assistant) for various graduate and undergraduate courses:

2017–19 ◦ *Probability theory, first semester* (STAT 205A, for graduate students, two times)
2017–19 ◦ *Concepts of Probability* (STAT 134, for undergraduate students, two times)
2019–20 ◦ *Stochastic Processes* (STAT 150, for undergraduate students, two times)
2018 ◦ *Introduction to Probability and Statistics at an Advanced Level* (STAT 200A, for Master students in non-Statistics programs)
2016–17 ◦ *Probability theory, second semester* (STAT 205B, for graduate students, two times)
2016 ◦ *Introduction to Probability at an Advanced Level* (STAT 201A, for Master students in Statistics)
2016 ◦ *Introduction to Statistics at an Advanced Level* (STAT 201B, for Master students in Statistics)

BME, Faculty of Natural Sciences,
Teaching assistant for courses on

2012 ◦ *Probability Theory*
2012 ◦ *calculus for engineering students*
2012 ◦ *Cryptography and Coding Theory*

BME, Faculty of Electrical Engineering and Informatics,
Department of Computer Science and Information Theory

2010 ◦ *Practical course on computer science*

Student supervising:

Eindhoven University of Technology
Department of Mathematics and Computer Science

2021 ◦ Mike van Santvoort, MSc thesis (co-supervised with Júlia Komjáthy):
Stochastic SIR in metapopulations
2021 ◦ Rick Reubsaet, BSc thesis (co-supervised with Júlia Komjáthy):
Distance penalised spreading in infinite graphs

2020-21 ◦ Järvi Raes, BSc thesis (co-supervised with Júlia Komjáthy):
On the threshold metric dimension

Honors and awards:

2019 ◦ Outstanding Graduate Student Instructor Award, UC Berkeley
2014 ◦ Kató Rényi Memorial Prize, Second Category (awarded by the János Bolyai Mathematical Society for original research conducted before graduation)
◦ UC Berkeley Loève Fellowship (provides funding for the first two years of the PhD program)
2013 ◦ First Prize at the Scientific Conference for Students, BUTE
Research topic: Quenched Invariance Principle for the Random Walk on the Penrose Tiling
Advisor: András Telcs
◦ First Prize at the International Mathematics Competition for University Students
◦ Scientific Scholarship of the Faculty of Natural Sciences, BUTE
2012 ◦ Second Prize at the International Mathematics Competition for University Students
2010 ◦ Third Prize at the International Mathematics Competition for University Students
2009 ◦ 11^{th} place at the Hungarian National High School Competition in Mathematics
◦ 24^{th} place at the Hungarian National High School Competition in Physics

Talks at conferences, workshops, seminars:

2023 ◦ Drafting Workshop in Discrete Mathematics and Probability, Erdős Center, Budapest, Hungary, Feb 6–8
2022 ◦ Workshop: Mathematics of Large Networks, Erdős Center, Budapest, Hungary, May 9–13
◦ SPP2265 Workshop – Random Spatial Networks, Bonn, Germany, Mar 14–17
2021 ◦ ANR Workshop – Geometric Random Graph Models and Percolation, Oct 19–20
◦ Eurandom (TUe)–Bézout Labex (Université Paris–Est) Workshop – Random Graphs, Statistical Mechanics and Networks, IHP, Paris, France, July 7–9
◦ SPOR Seminar of TU/e, Department of Mathematics and Computer Science, Sep 15
◦ Probability Seminar of UC Berkeley, Department of Statistics, Apr 29
2019 ◦ Invited speaker at FOCS (60th Annual IEEE Symposium on Foundations of Computer Science), Nov 9–12, Baltimore, Maryland

Other conferences, workshops, summer schools:

2022 ◦ Summer school: Graphs, Groups, Stochastic Processes, Erdős Center, Budapest, Hungary, June 6–10

◦ Summer school: Mathematics of Large Networks, Erdős Center, Budapest, Hungary, May 30–Jun 3

◦ Workshop: Graphs, Groups, Stochastic Processes, Erdős Center, Budapest, Hungary, May 16–20

2021 ◦ Oberwolfach Workshop – Spatial Networks and Percolation, Oberwolfach, Germany, Jan 17–23

2020 ◦ Workshop on Stochastic Geometry and Communications, Weierstrass Institute, Berlin, Nov 2–4

◦ Seminar on Stochastic Processes, Mar 13–16, The University of Utah, Salt Lake City, Utah

2017 ◦ PIMS-CRM Summer School in Probability, Jun 5–30, University of British Columbia

2016 ◦ Poster presenter at Simons Conference on Random Graph Processes, May 9–12, UT Austin

◦ Counting Complexity and Phase Transitions, Jan 11–May 13, workshops at Simons Institute, UC Berkeley

2015 ◦ Stochastics and Interactions, Jul 21–24, Alfréd Rényi Institute of Mathematics

◦ CRM-PIMS Summer School in Probability, Jun 15–Jul 11, McGill University

2014 ◦ PIMS Summer School in Probability, Jun 2–27, University of British Columbia

◦ Stochastic Activity Month (mini courses), Jan 13–17, Eurandom, TU Eindhoven

2013 ◦ Erdős Centennial Conference, Jul 1–5, Budapest, Hungary

Other:

Language skills:	Hungarian (native), English (fluent), French (intermediate)
Computer skills:	C/C++, Python, Mathematica, Matlab, LaTeX