

Curriculum Vitae

Bálint Vető

Personal data:

Nationality: Hungarian
Date of birth: February 9, 1983
Place of birth: Budapest, Hungary

Contact information:

Address: Institute of Mathematics,
Budapest University of Technology and Economics (BME)
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Research interest:

probability theory, KPZ universality class, random growth models, interacting particle systems, non-intersecting random walks and processes, determinantal processes, random matrix theory
self-interacting random walks and processes, random walks with long memory, myopic (“true”) self-avoiding walk
stochastic modelling in financial mathematics

Positions:

Oct 2013–Sep 2017 Postdoctoral fellow of the Hungarian Academy of Sciences
hosted at the MTA–BME Stochastics Research Group
Nov 2012–Sep 2013 Humboldt postdoctoral fellow, Bonn University
(mentor: Patrik Ferrari)
Oct 2011–Oct 2012 postdoctoral fellow, Hausdorff Center for Mathematics, Bonn
(mentor: Patrik Ferrari)
Jan–Sep 2011 research assistant, MTA–BME Stochastics Research Group
Jan–Aug 2010 research assistant, MTA–BME Stochastics Research Group

Other professional activity:

- participant of the Morgan Stanley – BME Financial Innovation Centre project
Weighted Monte Carlo Methods for Finance, 2010–2011

Honours and scholarships:

- János Bolyai Research Scholarship of the Hungarian Academy of Sciences, 2015–2018
- Paul Erdős Scholarship for Young Researchers, 2014
- Postdoctoral Fellowship of the Hungarian Academy of Sciences, awarded twice: 2013–2015 and 2015–2017
- Humboldt Research Fellowship for Postdoctoral Researchers, 2012–2013
- Junior Research Fellowship, Erwin Schrödinger Institute, Vienna, 2008
- Scholarship of the Hungarian Republic, awarded twice: 2004 and 2005
- First Prize, National Scientific Students' Conference, Hungary, 2005
- Gábor Dénes Prize of Scientific Students' Conference, Hungary, 2004

Education:

- 2006–2011 PhD in Mathematics and Computer Science,
Budapest University of Technology, summa cum laude
- 2001–2006 MSc in Mathematics,
Budapest University of Technology, diploma with honours

PhD advisor: prof. Bálint Tóth

Title of PhD dissertation: Asymptotic behaviour of random walks with long memory
(defended in June 2011)

Conference and seminar talks:

- Stochastic seminar, Institute of Science and Technology, IST Austria, May 2015
- Department seminar, Central European University, Budapest, Jan 2015
- 37th Conference on Stochastic Processes and their Applications, Buenos Aires, Argentina, July 2014
- 11th German Probability and Statistics Days, Ulm, March 2014
- Advanced School and Workshop on Random Matrices and Growth Models, Trieste, September 2013
- **invited speaker** 36th Conference on Stochastic Processes and their Applications, Boulder, CO, July 2013
- European Meeting of Statisticians, Budapest, July 2013
- Stochastics seminar, University of Wisconsin, Madison, WI, May 2013
- Stochastics seminar, Leiden University, November 2012
- Analysis seminar, Leuven University, October 2012
- Workshop on Scaling Limits in Models of Statistical Mechanics, Oberwolfach, September 2012

- Stochastics seminar, Technical University Munich, November 2011
- Stochastics seminar, Bonn University, January 2011 and November 2011
- poster, Workshop on Combinatorics and Analysis in Spatial Probability, EURANDOM, Eindhoven, December 2010
- Stochastics seminar, Tübingen University, January 2010
- Berlin–Zürich Summer School, Chorin, September 2009
- **invited speaker**, 27th European Meeting of Statisticians, Toulouse, July 2009
- Workshop on Combinatorics and Statistical Physics, Erwin Schrödinger Institute, Vienna, May 2008

Conferences, visits:

- Random Interfaces and Integrable Probability, Florence, Italy, 2015
- Advances in Probability: Integrability, Universality and Beyond, Oxford, UK, 2014
- Laplacians, Random Walks, Bose Gas, Quantum Spin Systems, Leverhulme workshop, Bristol, UK, 2014
- Probability, Analysis and Dynamics, Bristol, UK, 2014
- Random Walks: Crossroads and Perspectives, Budapest, Hungary, 2013
- Random Matrices Workshop, Bonn, Germany, 2012
- Interacting particle systems, growth models and random matrices workshop, Warwick, UK, 2012
- **teaching assistant**, 2011 School on Mathematical Statistical Physics, Prague, Czech Republic, 2 weeks, 2011
- La Pietra Meeting, Florence, Italy, 1 week, 2011
- research visit, Tübingen, Germany, 2 weeks, 2010
- New random geometries, workshop, Bath, UK, 2009
- **teaching assistant**, Zürich–Berlin Summer School, Chorin, Germany, 1 week, 2009
- **junior research fellow**, Erwin Schrödinger Institute, Vienna, Austria, 5 months, 2008
- IAS/Park City Mathematics Institute Summer Session in statistical physics, Park City, UT, USA, 3 weeks, 2007
- Random Graphs and Complex Networks, EURANDOM workshop, Eindhoven, Netherlands, 2007
- French–Hungarian student exchange program, École Normale Supérieure, Paris, France, 2 weeks, 2005
- CEEPUS Summer School, Hradec Králové, Czech Republic, 2 weeks, 2003

Organization activity:

- co-organizer of the conference “Stochastics and Interactions”, Budapest, July 2015
- organizer of a contributed session “Interacting particle systems” on the 29th European Meeting of Statisticians, Budapest, July 2013

Referee:

- AMS Mathematical Reviews – reviewer
- Ann. Probab.
- Probab. Theory Related Fields
- Comm. Math. Phys.
- ALEA – Lat. Am. J. Probab. Math. Stat.
- Stochastic Process. Appl.
- J. Stat. Phys.
- Random Structures Algorithms
- Combinatorica

Teaching experience:

- Extreme value theory for MSc students in mathematics, 2014
- Calculus lecture for architecture students since 2014
- Problem Solving Seminar for first year undergraduate students in mathematics (compulsory course) since 2006 for 10 semesters
- co-organizer of the student seminars for MSc students in mathematics for 2 semesters (2008 and 2009): choosing course material and supervising the preparation of students to the seminar talks (renewal theory, the continuum random tree)
- problem solving courses for undergraduate students in civil engineering, architecture, informatics, electrical engineering and physics since 2002 for more than 10 semesters for the courses: Calculus, Linear Algebra, Multivariate Calculus, Probability Theory, Discrete Mathematics, Theory of Algorithms

Supervision of theses:

- Réka Szabó, Scientific Students Conference (Third Prize at BME and Second Prize at the national final) and MSc, 2015
- Zsófia Talyigás, BSc, 2015
- Ákos Somogyi, BSc, 2014
- István Rédl, Scientific Students Conference (First Prize at BME and participation on the national final) and BSc (jointly with Bálint Tóth), 2009

Foreign languages:

German fluent
English fluent
Italian intermediate

Publications:

- R. Szabó, B. Vető: Ages of records in random walks, preprint, arXiv: 1510.01152
- S. Delvaux, B. Vető: The hard edge tacnode process and the hard edge Pearcey process with non-intersecting squared Bessel paths, *Random Matrices Theory Appl.* **4** (2015), no. 2, 1550008
- A. Borodin, I. Corwin, P. Ferrari, B. Vető: Height fluctuations for the stationary KPZ equation, to appear in *Math. Phys. Anal. Geom.*
- B. Vető: Tracy–Widom limit of q-Hahn TASEP, *Electron. J. Probab.* **20** (2015), no. 102, 1–22
- P. Ferrari, B. Vető: Tracy–Widom asymptotics for q-TASEP, *Ann. Inst. Henri Poincaré Probab. Stat.* **51** (2015), no. 4, 1465–1485
- I. Horváth, B. Tóth, B. Vető: Relaxed sector condition, *Special Issue Bull. Inst. Math. Acad. Sin. (N.S.)* **7** (2012), no. 4, 463–476
- P. Ferrari, B. Vető: Non-colliding Brownian bridges and the asymmetric tacnode process, *Electron. J. Probab.* **17** (2012), no. 44, 1–17
- M. Stippinger, B. Vető, É. Rácz, Zs. Bihary: Analytic results and weighted Monte Carlo simulations for CDO pricing, *Eur. Phys. J. B* **85** (2012), no. 2, 51
- I. Horváth, B. Tóth, B. Vető: Diffusive limits for “true” (or myopic) self-avoiding random walks and self-repellent Brownian polymers in $d \geq 3$, *Probab. Theory Related Fields* **153** (2012), no. 3–4, 691–726
- B. Tóth, B. Vető: Continuous time ‘true’ self-avoiding random walk on \mathbb{Z} , *ALEA – Lat. Am. J. Probab. Math. Stat.* **8** (2011), 59–75
- B. Vető: The “True” Self-Avoiding Random Walk in \mathbb{Z} , *Wolfram Demonstration Project* (2009)
- B. Tóth, B. Vető: Self-repelling random walk with directed edges on \mathbb{Z} , *Electr. J. Probab.* **13** (2008), no. 62, 1909–1926
- B. Tóth, B. Vető: Skorohod-reflection of Brownian Paths and BES^3 , *Acta Sci. Math. (Szeged)* **73** (2007), no. 3–4, 781–788
- B. Vető: The time evolution of permutations under random stirring, *Acta Sci. Math. (Szeged)* **72** (2006), no. 3–4, 891–906