Mykola Vovchanskyi

Junior researcher, Department of the theory of stochastic processes

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Education

2021	Ph.D. thesis "Coalescing stochastic processes and point processes", Institute of Mathematics, NAS of Ukraine, superviser: A.A. Dorogovtsev
2011-2014	Postgraduate course at the Institute of Mathematics, NAS of Ukraine
2009-2011	Master degree in Informatics, Physical Technical Institute, National Technical University of Ukraine "Kyiv Polytechnic Institute"
2005-2009	Bachelor degree in Applied Mathematics, Physical Technical Institute, National Technical University of Ukraine "Kyiv Polytechnic Institute"

Employment

November 2014 – October 2015, since October 2018	Junior researcher, Department of the theory of stochastic processes, Institute of Mathematics, National Academy of Sciences of Ukraine
2011–2021	Data scientist, statistician (self-employed)
February 2014 – August 2017	Data scientist and Operations Analyst, Jooble
September 2012 – December 2013	Assistant, National Technical University of Ukraine "Kyiv Polytechnic Institute"
October 2011 – December 2011	Assistant, Visiting Researcher, Utrecht University, Netherlands

Current scientific interests

stochastic flows of interacting diffusion particles with common noise; numerical methods for SDEs

Publications

1. V. Prymirenko, A. Demianiuk, A. Pilipenko, M. Vovchanskyi, "Formation of a heterogeneous group of UAVs with a reasonable number of false and real drones", to appear

2. M.B. Vovchanskyi, A quick probability-oriented introduction to operator splitting methods, Theory Stoch. Process., vol. 28, no.1, pp. 50–110, 2024

3. M.B. Vovchanskyi, "Splitting-up for homeomorphic and coalescing stochastic flows", ESAIM Prob. Stat., vol. 28, pp. 75–109, 2024

4. A.A. Dorogovtsev and M.B. Vovchanskyi, "On 1-point densities for Arratia flows with drift", Stochastics, vol. 95, no. 8, pp. 1429–1445, 2023

5. A.A. Dorogovtsev and M.B. Vovchanskii, "On the approximations of point measures associated with the Brownian web by means of the fractional step method and discretization of the initial interval", Ukr Math J, vol. 72, pp. 1358–1376, 2021 (also published in Ukrain. Math. J., vol. 72, no. 9, pp. 1179-1194, 2020)

6. A.A. Dorogovtsev and N.B. Vovchanskii, "Representations of the finite-dimensional point densities in Arratia flows with drift", Theory Stoch. Process., vol. 25, no. 1, pp. 25-36, 2020

7. M.B. Vovchanskii, Convergence of solution of SDEs to Harris flows, Theory Stoch. Process., vol. 23, no. 2, pp. 80–91, 2018

8. A.A. Dorogovtsev and N.B. Vovchanskii, Arratia flow with drift and Trotter formula for Brownian web, Communications on Stochastic Analysis, Volume 12, no 1, 2018

9. K. Goncharova, G. Skibo, (...), M.B. Vovchanskii, S.G. Pierzynowski, Diet-induced changes in brain structure and behavior in old gerbils, Nutrition and Diabetes, 5(6):e163, 2015

10. A.A. Dorogovtsev, A. Gnedin and M.B. Vovchanskii, Iterated logarithm law for sizes of clusters in Arratia flow, Theory of Stochastic Processes 18(2), 2013

11. M. Vovchanskyi and V. Kliuchnikov, On continual trees arising as trajectories of systems of coalescing diffusion particles, Mathematics today, issue 14, 2008

Participation in conferences and workshops

1. Kyiv-Leipzig Conference "Stochastic Processes and Related Topics", Ukraine-Germany, June 10-11, 2024

2. International conference "One-Parameter Semigroups of Operators 2024: Stochastics and Dynamics" (OPSO-2024), June 3-7, 2024

3. Joint Kiev-Warwick Stochastic Analysis Seminar, Warwick-Kyiv, UK-Ukraine, December 11, 2023

4. International Uzbek-Ukrainian conference "Modern problems of the theory of stochastic processes and their applications", Tashkent-Kyiv, Uzbekistan-Ukraine, October 10-11, 2023

5. "Uzbekistan-Ukrainian readings in stochastic processes", Kyiv-Tashkent, Ukraine-Uzbekistan, February 3 − June 24, 2022

6. (as a speaker) Data Science School, Kyiv Academic University, Kyiv, July 1-7, 2021

7. International Scientific Conference "Modern Problems of Stochastic Analysis", dedicated to the 100th anniversary of academician S.Kh.Sirajdinov, Tashkent, Uzbekistan, September 21-22, 2020

8. (as a speaker) International Mini-School in Probability, Jilin University, Changcnun, China, April 8-14, 2019

9. International Conference "Stochastic Equations, Limit Theorems and Statistics of Stochastic Processes", dedicated to the 100th Anniversary of I.I.Gikhman, Kyiv, Ukraine, September 17-22, 2018

10. Yu.V.Linnik Centennial Conference "Analytical Methods in Number Theory, Probability Theory and Mathematical Statistics", St.Petesburg, Russian Federation, September 14-18, 2015

11. 11th International Vilnius Conference on Probability Theory and Mathematical Statistics, Vilnius, Lithuania, June 30 − July 4, 2014

12. International Mathematical Conference "Bogolyubov Readings-2013. Differential Equations, Theory of Functions, and Their Applications", Sevastopil, Ukraine, June 23-30, 2013

13. 20-th International Conference of Young Scientists "Lomonosov", Moscow, Russian Federation, April 8-13, 2013

14. National Scientific Conference "Modern Problems of Probability Theory and Analysis, Vorokhta, Ukraine, February 25 – March 3, 2013

15. 19-th International Conference of Young Scientists "Lomonosov", Moscow, Russian Federation, April 9-13, 2012

Grants and scholarships

- a grant from the Simons Foundation, USA, 2023-2024

- a grant from the Simons Foundation (1030291, M.B.V.), USA, 2022

- Scholarship of NAN of Ukraine for young scientists, 2022-2023

- Erasmus+ ICM scholarship for visiting Friedrich-Schiller-University, Jena, Germany, 2020