Yeor Hafouta- Curriculum Vitae

Personal Information

Citizenship: Israel, USA

Married with one child

Contact Information

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Research interests

Probability and dynamical systems

Employment

2023-Present	Assistant Professor, The University of Florida.
2022-2023	Postdoctoral Associate, The University of Maryland (hosted by D. Dolgopyat).
2019-2022	Zassenhaus Assistant Professor, The Ohio State University.

Education

2015-2019	Ph.D, Mathematics, The Hebrew University of Jerusalem. Advisor: Prof. Yuri Kifer.
2012-2014	M.Sc., Mathematics, The Hebrew University of Jerusalem (Magna cum laude). Advisor: Prof. Yuri Kifer.
2009-2011	B.Sc., Mathematics, The Hebrew University of Jerusalem (Magna cum laude).

Awards and grants

- Kadmiel Prize for outstanding graduate students in Mathematics, 2013.
- Klein Prize for outstanding graduate students in Mathematics and Chemistry, 2014.
- Zochovitzky Prize for excellence in research, 2018 (prize for graduate students).
- AMS Simons Travel Grant, July 2022-June 2024.

Publications

- (with Y. Kifer) A nonconventional local limit theorem, *J. Theor. Probab.* 29 (2016), 1524-1553.
- (with Y. Kifer) Berry-Esseen type estimates for nonconventional sums, *Stoch. Proc. Appl*. 126 (2016), 2430-2464.
- (with Y. Kifer) Nonconventional polynomial CLT, Stochastics, 89 (2017), 550-591
- Stein's method for nonconventional sums, *Electron. Commun. Probab*. 23 (2018), 14 pages.
- (with Y. Kifer, book) *Nonconventional limit theorems and random dynamics, World Scientific*, Singapore, 2018, 299 pages.
- Nonconventional moderate deviations theorems and exponential concentration inequalities*, Ann. Inst. H. Poincaré Probab. Statist*., Vol. 56, No. 1, 428–448 (2020).
- Limit theorems for some skew products with mixing base maps*, Ergod. Theory Dyn. Syst.* 41, pp. 241–271 (2021).
- On the asymptotic moments and Edgeworth expansions for some processes in random dynamical environment, *J. Stat. Phys*. 179 (2020), 945–971.
- Limit theorems for some time dependent dynamical systems, *Nonlinearity* 33, 6421 (2020).
- A functional CLT for nonconventional polynomial arrays, *Discrete Contin. Dyn. Syst*. 40 (2020), 2827-2873.
- (With D. Dragičević) Limit theorems for random expanding or Anosov dynamical systems and vector-valued observables, *Ann. Henri Poincaré* 21 (2020), 3869—3917.
- (Book Chapter, with D. Dragičević) Almost sure invariance principle for random distance expanding maps with a nonuniform decay of correlations, *Thermodynamic Formalism,* CIRM Jean-Morlet Chair Subseries (2021, Edited by M. Pollicott and S. Vaienti), Springer-Verlag, 27 pages.
- On Eagleson's theorem in the non-stationary setup, *B. Lond. Math. Soc.*, Vol 53, Issue 4 (2021), 19 pages.
- A local limit theorem for number of multiple recurrences generated by some mixing processes with applications to Young towers, accepted for publication in Journal d'Analyse Mathématique, arXiv:2003.08528, 48 pages.
- (With D. Dragičević) A vector-valued almost sure invariance principle for random hyperbolic and piecewise-expanding maps, *Nonlinearity 34 6337 (2021)*, 29 pages.
- Limit theorems for random non-uniformly expanding or hyperbolic maps with exponential tails, *Ann. Henri Poincaré* 23, pages 293-332 (2022).

- (with D. Dolgopyat) Edgeworth expansions for independent bounded integer valued random variables, to appear in Stoch. Proc. Appl. (2022) https://doi.org/10.1016/j.spa.2022.07.001
- An almost sure invariance principle for some classes of non-stationary mixing sequences, arXiv:2005.02915, 12 pages, accepted to Stat. Prob. Lett.
- (with D. Dolgopyat) A Berry-Esseen theorem and Edgeworth expansions for uniformly elliptic inhomogeneous Markov chains, preprint, arXiv 2111. 03738, 31 pages, accepted to Probab. Theory Relat. Fields.
- (with D. Dragičević and J. Sedro) A vector-valued almost sure invariance principle for random expanding on average cocycles, https://arxiv.org/abs/2108.08714, 41 pages (accepted to J. Stat. Phys.)
- Convergence rates in the functional CLT for alpha-mixing triangular arrays appear in Stoch. Proc. Appl. 49 pages.
- Large deviations, moment estimates and almost sure invariance principles for skew products with mixing base maps and expanding on the average fibers, to appear in ETDS, 41 pages
- Explicit conditions for the CLT and related results for non-uniformly partially expanding random dynamical systems via Effective RPF rates, Adv. Math 426 (86 pages).

Preprints

- A vector valued almost sure invariance principle for time dependent non-uniformly expanding dynamical systems, arXiv 1910.12792, 21 pages.
- On the functional CLT for slowly mixing triangular arrays, arXiv:2111.05807, 13 pages.
- (with D. Dolgopyat) Edgeworth expansions for integer valued additive functionals of uniformly elliptic Markov chains, arXiv:2203.15907, 30 pages.
- Non-uniform Berry-Esseen theorems and Edgeworth expansions for weakly dependent random variables, https://arxiv.org/abs/2210.07204.

Teaching

Teaching experience at the Hebrew University of Jerusalem:

- TA: Infinitesimal Calculus (1), Fall 2013, Fall 2015, Fall 2016, Fall 2017, Fall 2018.
- TA: Infinitesimal Calculus (2), Spring 2015.
- TA: Calculus for engineering and science students, Spring 2016, Spring 2018.
- TA: Ordinary Differential Equations, Spring 2017.
- TA: Fundamental Concepts in Functional Analysis (graduate course), Fall 2018.
- TA, Fundamental Concepts in Spectral Analysis (graduate course), Spring 2018.

Teaching experience at the Ohio State University:

- Engineering Mathematics B, Fall 2019, Fall 2021
- Engineering Mathematics A, Spring 2020
- Introductory Analysis 1, Fall 2021, Spring 2021
- Real Analysis II (graduate course), Spring 2021
- Foundations of Higher Mathematics, Spring 2022.

Teaching experience at the University of Maryland:

- Elementary Calculus 1, Spring 2023.

Teaching experience at the University of Florida:

- Real Analysis and Advanced Calculus 1, Fall 2023.

Talks

- Summer school in partial hyperbolicity, University of Maryland, June 2023
- Probability seminar, University of Maryland, April 2023
- Probability seminar, Temple University, April 2023
- Colloquium talk, Denver University, January 2023
- Action now seminar, Tel-Aviv University, December 2022
- Dynamics seminar, Technion, December 2022
- Colloquium talk, The University of Haifa, December 2022
- Probability seminar, Weitzman Institute of Technology, December 2022
- Probability seminar, The Hebrew University, December 2022
- Probability seminar, The Hebrew University, December 2022
- Colloquium talk, The University of Florida, December 2022
- Colloquium talk, Syracuse University, November 2022
- (conference) Probabilistic techniques for random and time-varying dynamical systems, Luminy, France, (October 2022).
- Dynamics Seminar, The University of Maryland, September 2022.
- (conference) ICDEA2022: 27th International Conference on Difference Equations and Applications, session "Qualitative Behavior of Nonautonomous Discrete Dynamical Systems", Paris-Saclay, France.
- Dynamics and Probability Seminar, The Hebrew University, May 2022.
- Probability seminar, Technion, May 2022.
- Mathematics Department Colloquium, Texas A&M University, December 2021 (online).
- Probability seminar, Carnegie Mellon University, December 2021.
- Probability and combinatorics seminar, The Ohio State University, December 2021 (online).
- Mathematics Department Colloquium, NC State, November 2021.
- (conference) The annual meeting of the Portuguese Mathematical Society, dynamical systems session-random dynamics, July 2021.
- Porto Dynamics Seminar, University of Porto, November 2020.
- Ergodic Theory Seminar, The Ohio State University, November 2020.

- Dynamics Seminar, The University of Maryland, November 2019.
- Probability and combinatorics seminar, The Ohio State University, November 2019.
- Welcome Seminar, The Ohio State University, October 2019.
- Dynamics and Probability Seminar, The Hebrew University, January 2019.
- Dynamics Lunch Seminar, The Hebrew University, April 2017.
- Statistics department seminar, The Hebrew University, June 2017.

Short Visits

- May 2022-June 2022. Weizmann Institute of Science (hosted by Omri Sarig).

Professional Service

1. Refereed papers for Tran. Am. Math. Soc. , Ann. Inst. H. Poincaré Probab. Statist., Comm. Math. Phys., Nonlinearity, J. Stat. Phys., Math. Phys. Anal. Geom, Forum Mathematicum, Stoch. Proc. Appl. and Springer Lecture Notes in Math.
2. Co-organized the Combinatoric and Probability Seminar at Ohio State (2021).