

Eugene Katsevich

Assistant Professor of Statistics

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Employment

University of Pennsylvania, Department of Statistics, Assistant Professor, 2020-present.

Carnegie Mellon University, Department of Statistics and Data Science, Postdoctoral Researcher, 2019-2020.

Advisors: Kathryn Roeder and Aaditya Ramdas.

Education

Stanford University, Ph.D. in Statistics, 2019.

Thesis Advisor: Chiara Sabatti.

Princeton University, A.B. in Mathematics (with Highest Honors), 2014.

Thesis Advisor: Amit Singer.

Preprints

- [1] **E. Katsevich**, C. Sabatti, and M. Bogomolov. Filtering the rejection set while preserving false discovery rate control. Available on [arXiv](#).
- [2] **E. Katsevich** and A. Ramdas. A theoretical treatment of conditional independence testing under Model-X. Available on [arXiv](#).
- [3] M. Liu, **E. Katsevich**, L. Janson, and A. Ramdas. Fast and powerful conditional randomization testing via distillation. Available on [arXiv](#).
- [4] **E. Katsevich** and K. Roeder. Conditional resampling improves sensitivity and specificity of single cell CRISPR regulatory screens. Available on [bioRxiv](#).

Publications

- [1] **E. Katsevich**, A. Katsevich, and G. Wang. Stability of the interior problem for polynomial region of interest. *Inverse Problems*, 28(6), 2012. Available on [PubMed](#).
- [2] B. Shi, **E. Katsevich**, B. Chiang, A. Katsevich, and A. Zamyatin. Image registration for motion estimation in cardiac CT. In *SPIE Medical Imaging*, San Diego, California, February 2014. Available on [SPIE digital library](#).
- [3] **E. Katsevich**, A. Katsevich, A. Singer. Covariance matrix estimation for the cryo-EM heterogeneity problem. *SIAM Journal on Imaging Sciences*, 8(1):126–185, 2015. Available on [PubMed](#).

- [4] J. Anden, **E. Katsevich**, and A. Singer. Covariance estimation using conjugate gradient for 3D classification in cryo-EM. In *IEEE Int Symp Biomed Imaging*, New York, New York, April 2015. Available on [PubMed](#).
- [5] **E. Katsevich** and C. Sabatti. Multilayer Knockoff Filter: Controlled variable selection at multiple resolutions. *Annals of Applied Statistics*, 13(1):1–33, 2019. Available on [Project Euclid](#).
- [6] **E. Katsevich** and A. Ramdas. Simultaneous high-probability bounds on the false discovery proportion in structured, regression, and online settings. *Annals of Statistics*, to appear, 2020. Available on [arXiv](#).
- [7] J. Zhu, Q. Zhao, **E. Katsevich**, C. Sabatti. Exploratory Gene Ontology Analysis with Interactive Visualization. *Nature Scientific Reports*, 9:7793, 2019. Available at [nature.com](#).
- [8] M. Sesia, **E. Katsevich**, S. Bates, E. Candès, C. Sabatti. Multi-resolution localization of causal variants across the genome. *Nature Communications*, 11:1093, 2020. Available on [nature.com](#).

Industry Experience

- *Research intern*, 23andMe computational biology team (Summer 2018).
- *Research intern*, Toshiba Medical Research Institute USA, (Summer 2013).
- *Research intern*, Virginia Tech Biomedical Imaging Division, (Summer 2011).

Fellowships and Funding

- Hertz Fellowship (2014-2019).
- National Defense Science and Engineering Fellowship (2014-2017).
- Department of Energy Computational Sciences Graduate Fellowship (declined for NDSEG)
- Barry Goldwater Scholarship (2012).

Awards

- Jerome H. Friedman Applied Statistics Dissertation Award (2019)
- Statistics Department Teaching Assistant Award (2016).
- George B. Covington Thesis Prize in Mathematics (2014)
- Early election to Phi Beta Kappa (2013; awarded to top 1% of Princeton graduating class).
- Shapiro Prize for Academic Excellence (2011, 2012).
- Freshman First Honor Prize (2011).

Teaching

Courses Taught at Stanford

- STATS 302: Qualifying Exams Workshop, Summer '17 – Graduate Level.

Courses Served as Teaching Assistant at Stanford

- STATS 315A: Modern Applied Statistics: Learning, Winter '18 – Graduate Level.
- STATS 60: Introduction to Statistical Methods: Precalculus, Fall '16 – Undergraduate Level.
- STATS 191: Introduction to Applied Statistics, Winter '16 – Undergraduate Level.
- STATS 203: Introduction to Regression Models and Analysis of Variance, Spring '15 – Graduate level.

Professional Service Activities

- *Reviewer*, Annals of Statistics, Journal of the Royal Statistical Society (Series B), Journal of the American Statistical Association, Annals of Applied Statistics, Proceedings of the National Academy of Sciences, Statistics and Probability Letters, Journal of Computational and Graphical Statistics, Electronic Journal of Statistics, Genetics.
- *Organizer*, Stanford statistics department orientation program for PhD students (2018).
- *Organizer*, Hertz West Coast Retreat (2017).
- *Academic chair*, Princeton Math Club (2012).
- *Head problem writer*, Princeton University Math Competition (2011).

Presentations

Invited talks

- *The conditional randomization test in theory and in practice.*
International Seminar on Selective Inference, Aug. 20, 2020, held virtually.
- *A theoretical treatment of conditional independence testing under Model-X.*
Joint Statistical Meetings, Aug. 2–6, 2020, held virtually.
- *Multiple testing for modern data: structure, curation, and replicability.*
U.C. San Diego Halicioglu Data Science Institute Special Seminar, Feb. 12, 2019.
- *Multiple testing for modern data: structure, curation, and replicability.*
Rutgers University Statistics Seminar, Feb. 5, 2019.
- *Multiple testing for modern data: structure, curation, and replicability.*
Wharton Statistics Seminar, University of Pennsylvania, Jan. 30, 2019.
- *Multiple testing for modern data: structure, curation, and replicability.*
University of Chicago Statistics Colloquium, Jan. 24, 2019.
- *Controlling FDR while highlighting distinct discoveries, with applications to GO enrichment analysis.*
Stanford University Biostatistics Workshop, Oct. 11, 2018.
- *Controlling FDR while highlighting distinct discoveries, with applications to GO enrichment analysis.*
U.C. Berkeley Statistics and Genomics Seminar, Sep. 27, 2018.

Contributed talks

- *A theoretical treatment of conditional independence testing under Model-X.*
Bernoulli-IMS One World Symposium, Aug. 24–28, 2020, held virtually.
- *Simultaneous High-Probability Bounds on the False Discovery Proportion for Nested Sequences of Rejection Sets.*
International Conference on Multiple Comparison Procedures, Dec. 13–15, 2019, in Taipei, Taiwan.
- *Gene Ontology enrichment testing: Reconciling FDR control with filtering.*
Joint Statistical Meetings, Jul. 28–Aug. 2, 2018, in Vancouver, Canada.
- *The multilayer knockoff filter: Controlled multi-resolution variable selection.*
International Conference on Multiple Comparison Procedures, Jun. 20–23, 2017, in Riverside, California.

Poster Presentations

- *Controlling FDR While Highlighting Selected Discoveries.*
International Conference on Multiple Comparison Procedures, Dec. 13–15, 2019, in Taipei, Taiwan.
- *Multi-resolution association analysis for exome-wide sequencing.*
American Society for Human Genetics, Oct. 16–20, 2018, in San Diego, California.
- *Controlling FDR while highlighting distinct discoveries.*
Workshop on Higher-Order Asymptotics and Post-Selection Inference, Sep. 8–10 2018, in St. Louis, Missouri.
- *Multilayer FDR control for genetic association studies.*
Graybill Conference on Statistical Genomics and Genetics, Jun. 5–7 2017, in Fort Collins, Colorado.
Best student poster award.
- *The multilayer knockoff filter: Multilayer FDR control for association studies.*
Probabilistic Modeling in Genomics, Sep. 12–14, 2016, in Oxford, United Kingdom.

Workshop Participation

- *Participant*, Simons Institute Workshop on Robust and High-Dimensional Statistics (October 2018).
- *Participant*, Joint UCLA and Stanford Statistical Genetics Programming Workshop (Summer 2016).
- *Participant*, UCLA Computational Genomics Summer Institute short course (Summer 2016).