

Denis Nekipelov

Curriculum Vitae

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Employment

July 2014 – present, *Associate Professor of Economics and Computer Science (by courtesy)*, University of Virginia
November 2021 – present, *Amazon Scholar*, Amazon com Inc.
January 2018 – July 2018 *McCormick Advisory Council Visiting Associate Professor of Computer Science*, Northwestern University
July 2009 – present, *Visiting researcher*, Microsoft Research – New England
July 2009 – June 2014, *Assistant professor*, Department of Economics, UC Berkeley
June 2008 – June 2009, *Post-doctoral researcher*, Microsoft research – Silicon Valley

Education

Ph.D. in Economics, *Duke University*, Durham, NC, USA, 2008
M.A. in Economics (Cum Laude), *New Economic School*, Moscow, Russia, 2003
M.Sc., B.Sc. in Applied Physics and Mathematics (with distinctions), *Moscow Institute of Physics and Technology*, Moscow, Russia, 2003

Teaching

Interests:

Structural Econometrics for Big Data, Computational Methods of Industrial Organization

Previous teaching:

UC Berkeley: Graduate Econometrics (1st year Ph.D. sequence); Computational and Statistical Methods of Industrial Organization (2nd year Ph.D. elective); Econometric Theory (advanced undergraduate course). *Duke*: Mathematics for Economists (1st year Ph.D. course). *ZEW Workshop (Mannheim)*: Computational methods for industrial organization (2-day course). *EC'10 Tutorial (Harvard)*: Statistical analysis of structural models for applied computer scientists (2-lecture workshop).

Current teaching:

University of Virginia: Markets, Mechanisms and Machines (Econ 4995), Econometrics for Data-Rich Environments (Econ 8995), Econometric Theory (Econ 7710)

Publications

Estimating Static Models of Strategic Interactions (with Patrick Bajari, Han Hong and John

Krainer), *Journal of Business and Economic Statistics*, 28 (4), pp. 469-482, 2010.

Semiparametric Efficiency in Nonlinear LATE Models (with Han Hong), *Quantitative Economics*, 1(2), pp.179-304, 2010.

All-Solution Homotopy Methods for Computing Equilibria in Static Games of Incomplete Information (with Patrick Bajari, John Krainer, and Han Hong), *Operations Research* 58, 237-245, 2010.

Nonlinear Models of Measurement Errors (with Xiaohong Chen and Han Hong), *Journal of Economic Literature*, 49(4), pp. 901-937, 2011.

Efficient Local IV Estimation of an Empirical Auction Model (with Han Hong), *Journal of Econometrics*, 168(1), pp. 60-69, 2012.

Econometrics for Game Theory (with Patrick Bajari and Han Hong), in *Advances in Economics and Econometrics: Theory and Applications, 10th World Congress, 2013*.

Approximation Properties of Laplace-type Estimators (with Anna Kormilitsina), in *Advances in Econometrics, 2013*.

Mechanism Design for Data Science (with Jason Hartline and Shuchi Chawla), *Proceedings of the fifteenth ACM conference on Economics and computation. ACM*, pp. 711–712, 2014.

Eliciting Preferences of Sponsored Search advertisers, *SIGCOM Exchanges*, vol 13.1, 2014

Recovering Treatment Effects from Combined Data: Identification versus Data Security (with Tatiana Komarova and Evgeny Yakovlev), in *Economic Analysis of the Digital Economy*, eds. A. Goldfarb, S. Greenstein, C. Tucker, *The University of Chicago Press*, 2015.

Extremum Estimation and Numerical Derivatives (with Han Hong and Aprajit Mahajan), *Journal of Econometrics*, 2015

Consistent Variance of the Laplace Type Estimators: Application to DSGE Models (with Anna Kormilitsina), *International Economic Review*, 2015

Machine Learning Methods for Demand Estimation (with Patrick Bajari, Stephen Ryan and Miaoyu Yang), *American Economic Review*, 105(5), 2015.

Econometrics with Learning Agents (with Vasilis Syrgkanis and Eva Tardos), *ACM Economics and computation. ACM, 2015* (ACM EC Best Paper Award)

A/B Testing of Auctions (with Shuchi Chawla and Jason Hartline), *ACM Economics and computation. ACM, 2016*

Semiparametric Estimation of a Finite Horizon Discrete Choice Model with Application to the Analysis of Subprime Mortgage Defaults with Sean Chu and Minjung Park, *Quantitative Marketing and Economics*, 14.4, 2016.

Inference and Auction Design in Online Advertising (with Tammy Wang), *Communications of the ACM*, May 2017.

Welfare Guarantees from Data (with Darrell Hoy and Vasilis Syrgkanis), in *Advances in Neural Information Processing Systems*, pp 3768-3777.

Identification, Data Combination and the Risk of disclosure (with Shakeeb Khan), *Quantitative Economics*, vol 9, 2018.

Information Structure and Statistical Information in Discrete Response Models (with Shakeeb Khan), *Quantitative Economics*, vol 9, 2018.

The Role of Royalties in the Resource Extraction Contracts (with Robert Conrad and Bryce Hool) *Land Economics* , vol 94 (3), 2018.

Dashboard Mechanisms for Online Marketplaces (with Jason Hartline, Aleck Johnsen and Onno Zoeter), *ACM Economics and Computation* 2019

Simple and Robust Estimator for Discount Factors in Optimal Stopping Discrete Choice Models (with Oystein Daljord and Minjung Park), *Quantitative Marketing and Economics*, 2019

Inference from Auction Prices (with Jason Hartline, Aleck Johnson and Zihe Wang), forthcoming in *Proceedings in 19th ACM-SIAM Symposium on Discrete Algorithms*

Global Concavity and Optimization in a Class of Dynamic Discrete Choice Models (with Yiding Feng and Ekaterina Khmel'nitskaya), forthcoming in *Proceedings of 37th International Conference on Machine Learning*

Uniform Inference in a Class of Models with Edogeneity (with Shakeeb Khan), forthcoming in *Journal of Econometrics*

Learning the Optimal Recommendation from Revealed Preferences (with Hongning Wang, Haifeng Xu and Fan Yao), *proceedings of International Conference on Machine Learning 2021*.

Bias-Variance Games (with Yiding Feng, Ronen Gradwohl, Jason Hartline, Aleck Johnsen), forthcoming at *Proceedings of ACM EC*

The Econometrics of Static and Dynamic Models of Strategic Interactions (with Patrick Bajari and Han Hong), forthcoming in *Handbook of Econometrics*

Plug-in regularized estimation of high-dimensional parameters in nonlinear semiparametric models (with Vira Semenova and Vasilis Syrgkanis), *Econometrics Journal*, 25(2), 2022.

Learning from a Learning User for Optimal Recommendations, (with Fan Yao, Chuanhao Li, Hongning Wang, Haifeng Xu), forthcoming at AAAI22

Learning the Optimal Recommendation from Explorative Users (with Fan Yao, Chuanhao Li, Hongning Wang, Haifeng Xu), forthcoming at ICML22

Balancing data privacy and usability in the federal statistical system (with Hotz, V. Joseph, Christopher R. Bollinger, Tatiana Komarova, Charles F. Manski, Robert A. Moffitt, Aaron Sojourner, and Bruce D. Spencer) *Proceedings of the National Academy of Sciences* 119, no. 31 (2022)

Research Papers

Designing Large Advertising Markets Where Agents Have Heterogeneous Objectives: A Structural Empirical Approach (with Susan Athey)

Numerical Gradients and Extremum Estimation with U-statistics (with Han Hong and Aprajit Mahajan)

Private Extremum Estimation (with Evgeny Yakovlev and Tatiana Komarova)

Mechanism Redesign (with Shuchi Chawla and Jason Hartline)

Classification Trees for Heterogeneous Moment-Based Models (with Sam Asher, Paul Novosad and Stephen Ryan)

Presentations

2023 Harvard, McGill, Vanderbilt

2022 Philadelphia Fed, BU, Cornell, JHU, EPFL, Google Europe, Amazon

2021 Harvard/MIT, Google, Microsoft.

2020 Northwestern, Cornell, Microsoft

2019 Google, Georgetown, U of Chicago, NSF, U of Munich, McGill

2018 Northwestern, LSE, BC, Microsoft, ACM EC'18, NeurIPS'18

2017 Zillow, ASSA Winter, UC Davis, U of Iowa;

2016 ASSA Winter; Google Research New York), Booking.com, U Pompeu Fabra, Collegio Carlo Alberto, Bellairs Institute (McGill U), USC, UCL, U of Indiana;

2015 ASSA Winter, Georgetown, UW-Madison, Harvard, Michigan, Indiana, Wharton, Simons Institute (Berkeley), LSE, UCL;

2014 Cornell, McGill, U of Toronto, Columbia, Zillow Inc., Microsoft Research, Harvard, U of Virginia, USC, UC Riverside, Johns Hopkins U, PennState, SMU

2013 Microsoft Research, Stanford, Rochester, Ohio State, HEC Montreal, U of Toronto, NYU
2012 UCLA, LSE, Northwestern, Cornell, Microsoft Research, Berkeley, UW-Madison, U of Washington;
2011 UPenn, Duke, MIT, Microsoft Research, eBay labs, Yale, LSE;
2010 EC 2010 Meetings, LSE, UCL, Harvard, Yale, Cowles foundation Conference, WCES in Shanghai, University of Melbourne, LaTrobe, UNSW, University of Technology Sydney, Maquaire, UC Berkeley, USC, UC Davis, SICS 2010, Microsoft Advertising, Cowles foundation, NBER winter meetings, SITE;
2009 Cowles foundation, Georgetown, University of Maryland, University of Alicante, University of Amsterdam, Tilburg, UC Davis, UCSD, LSE, UCL, SMU, Northwestern;
2008 Princeton, Microsoft Research, Stanford GSB, Berkeley, UPenn, Carnegie Mellon (Tepper), Chicago GSB, Rice, Penn State, Georgia State (Robinson), University of Minnesota, Washington University (Olin), NYU, NYU (Stern), Columbia, UCLA, MIT (Sloan), Stony Brook, Northwestern, Microsoft Research, Berkeley (Haas), Harvard (IO), Harvard/MIT (Econometrics), Rochester

Advising

Pedro Gardete (2011, *Stanford GSB*), Evgeny Yakovlev (2012, *New Economic School*), TI Kim (2013, *Emory Business School*), Yongdong Liu (2015, *University College London*), Yanchi Yu (2018, *Cornerstone Research*)

Grants

2019 NSF collaborative research grant (awarded for 2019-2020)
2018 NSF collaborative research grant (awarded for 2019-2021)
2016 NSF collaborative research grant (awarded for 2016-2020)
2016 Google faculty research grant (awarded for 2016-2017)
2015 Google faculty research grant (awarded for 2015-2016)
2014 NSF collaborative research grant (awarded for 2014-2015)
2012 Sloan Foundation research grant (awarded for 2012-2015)
2011 NSF collaborative research grant (awarded for 2011-2015)
2010 NSF collaborative research grant (awarded for 2010-2013)

Honors and Awards

2017 The Dick Wittnick Prize
2015 ACM EC Best Paper Award
2011 US Patent US 2011/0313851 “A Tool for Analysis of Sponsored Search Auctions”
2008 Review of Economic Studies European Tour
2003 -2008 H. Gregg Lewis fellowship, Duke University

Professional Activities

2015-present, Academic Advisory Board Member, School of Data Science, University of Virginia

2017-present, Associate Editor, *Journal of Econometrics*

2014-present, Associate Editor, *Quantitative Marketing and Economics*

2020-present, Associate Editor, *Journal of Business and Economic Statistics*

2013-present, Senior Program Committee Member, Empirical Track Chair, ACM Economics and Computation Conference

2015, 2017 Co-Organizer, Algorithmic Game Theory and Data Science Workshop