Olga Kuryatnikova

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EXPERIENCE

- **Erasmus University Rotterdam, Netherlands**
  Assistant professor at Erasmus School of Economics
  Theory: non-linear optimization. Applications: networks and markets (e.g., energy, water, transport). Teaching: Linear Optimization, Optimization Under Uncertainty. Supervision: B.Sc. and M.Sc. theses.
  October 2020 - present

- **University of Western Ontario, Canada**
  Postdoctoral researcher at Ivey Business School
  Research: solving non-linear problems in energy network optimization
  October 2019 - October 2020

- **Tilburg University, Netherlands**
  Researcher and teacher at the Econometrics and Operations Research Department
  Research: polynomial optimization, convex optimization. Teaching: Convex Optimization, Machine Learning and Business Analytics, Statistics.
  September 2015 - September 2019

- **Sociale Verzekeringsbank, Netherlands**
  Intern in the Department of Finance & Control
  Built an econometric model of demand for social assistance for retirees.
  April 2014 - July 2014

- **Expert RA, Russia**
  Credit risk analyst in the Department of Corporate Ratings
  Developed credit rating methodologies and conducted credit risk analysis for pension funds, non-financial companies and sovereign issuers.
  June 2011 - August 2013

EDUCATION

- **Ph.D. Operations Research**
  Tilburg University, the Netherlands
  2015 - 2019.

- **M.Sc. Econometrics and Operations Research**
  Tilburg University, the Netherlands
  2013 - 2015

EDUCATION (cont.)

- **M.Sc. Financial Economics**
  Higher School of Economics, Russia
  2010 - 2012

- **B.Sc. Economics**
  Moscow State University, Russia
  2006 - 2010

SKILLS

- **Methods**
  Mathematical modeling and optimization, econometric modeling, statistical analysis, machine learning.

- **IT**
  MS Office, LaTeX, Matlab, Python, AIMMS. Some experience: Github, Julia, Jupiter Notebook, R, SQL, Stata.

- **Languages**
  Russian (native), English (fluent), Dutch (advanced).

MAIN RESEARCH

- **The maximum *k*-colorable subgraph problem and related problems**, with R. Sotirov and J. C. Vera. *Informs Journal on Computing, 2021.*
- **Adjustable robust optimization applied to Optimal Power Flow**, with B. Ghaddar and D. K. Molzahn. *Working paper 2021, under revision.*
- **New bounds for truthful scheduling on two unrelated selfish machines**, with J. C. Vera. *Theory of Computing Systems, 2020.*
- **Reducing non-negativity over general sets to non-negativity over simple sets**, with J. C. Vera and L.F. Zuluaga. *Working paper 2019, under revision.*

Other

- Recent conferences and workshops: Theoretical Foundations of Electricity Market Design (2022), SIAM Conference on Optimization (2021), ICCOPT Conference on Continuous Optimization (2019).
- Operations Research Seminar organizer at Erasmus University Rotterdam (2020 - present).

Appendix: publications and work in progress

Publications

- **The maximum k-colorable subgraph problem and related problems**, with R. Sotirov and J. C. Vera. Informs Journal on Computing, 34(1): 656–669, 2021.
- **New bounds for truthful scheduling on two unrelated selfish machines**, with J. C. Vera. Theory of Computing Systems, 64: 199–226, 2020.
- **Approximating the cone of copositive kernels to estimate the stability number of infinite graphs**, with J. C. Vera. Electronic Notes in Discrete Mathematics, 62: 303–308, 2017. Proceedings of LAGOS'17 – IX Latin and American Algorithms, Graphs and Optimization.

Working papers

- **Optimization hierarchies for distance-avoiding sets in compact spaces**, with B. Bekker, F.M. de Oliveira, J.C. Vera, 2023. Submitted.
- **Adjustable robust two-stage polynomial optimization with application to AC optimal power flow**, with B. Ghaddar and D. K. Molzahn, 2021. Minor revision at the SIAM Journal on Optimization.
- **Reducing non-negativity over general semialgebraic sets to non-negativity over simple sets**, with J. C. Vera and L.F. Zuluaga, 2019. Revise and resubmit in the SIAM Journal on Optimization.
- **Generalizations of Schoenberg's theorem on positive definite kernels**, with J. C. Vera, 2019. Submitted.
- **Positive semidefinite approximations to the cone of copositive kernels**, with J. C. Vera, 2018. Revise and resubmit in Mathematical Programming.

Clarification: Mathematical Programming and SIAM Journal on Optimization are the first two top journals on optimization according to the Google Scholar Mathematical Optimization Ranking. INFORMS Journal on Computing is one of the top journals on computational optimization, see, e.g., the top-core journals in Journal Ranking at Tilburg University (I have chosen the latter ranking since it is recently updated and open).

I am also working on the following topics, for which no preprints are available yet.

- Influence of battery operators and demand response on electricity market emissions under varying market conditions.
- Optimal bidding strategies for battery operators.
- Sparse positive semidefinite relaxations for water networks problems.