

# Curriculum Vitae

Olga Kuryatnikova  
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## Academic work experience

- Assistant professor**, Erasmus University Rotterdam  
Erasmus School of Economics, Department of Econometrics  
Oct 2020 – present *Research: solution approaches and approximation algorithms for non-linear problems*  
*Main applications: optimization for networks and markets, e.g., energy, water, transport*  
*Bachelor's and master's teaching and thesis supervision*
- Postdoctoral fellow**, University of Western Ontario  
Ivey Business School  
Oct 2019 – Oct 2020 *Solution approaches for non-linear problems in energy network optimization*
- Researcher and teacher**, Tilburg University  
TiSEM, Department of Econometrics & Operations Research  
Sep 2015 – May 2019 *Polynomial optimization, convex and conic optimization*

## Industrial work experience

- Intern in the department of finance & control**, Sociale Verzekeringsbank  
(institution that implements national insurance schemes in the Netherlands)  
Apr 2014 – July 2014 *Built an econometric model of the demand for social assistance for retirees*
- Credit risk analyst in the department of corporate ratings**, Expert RA  
(rating agency in Russia)  
June 2011 – Aug 2013 *Developed rating methodologies and conducted rating analysis for pension funds, industrial companies and sovereign issuers*

## Education

- PhD in Operations Research**, Tilburg University  
Sep 2015 – Sep 2019 *Thesis: The many faces of positivity to approximate structured optimization problems*  
*Supervisors: J.C. Vera, R. Sotirov, L.F. Zuluaga*
- MSc in Econometrics and Operations Research**, Tilburg Uni. (cum laude)  
Aug 2013 – Aug 2015
- MSc in Economics**, Higher School of Economics  
Aug 2010 – May 2012
- BSc in Economics**, Lomonosov Moscow State University (cum laude)  
Sep 2006 – June 2010

## Research

### Publications

- **The maximum  $k$ -colorable subgraph problem and related problems**, with R. Sotirov and J. C. Vera. *Inform 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

- **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 at 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 at Mathematical Programming.

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.
- Positive semidefinite hierarchies for the maximum measurable distance avoiding set problem.

## Teaching

2021 – present	Optimization under Uncertainty, Erasmus University Rotterdam (state-of-the-art robust and stochastic optimization techniques) level: master, role: coordinator and lecturer
2021 – present	Linear Programming, Erasmus University Rotterdam level: bachelor, role: coordinator and lecturer
2017 – 2019	Optimization, Tilburg University (continuous non-linear optimization and robust optimization) level: master, role: teaching assistant and lecturer
2016 – 2019	Decision making with Business Analytics, Tilburg University (state-of-the-art machine learning techniques and their applications) level: master, role: teaching assistant
2016 – 2018	Statistics, Tilburg University level: bachelor, role: teaching assistant

## Conferences and workshops

February 2023 (expected)	Brainstorming day on measure and polynomial optimization at the Laboratory for Analysis and Architecture of Systems (LAAS) (speaker)
2022	ICCOPT, International conference on continuous optimization (session organizer) Spring School in Theoretical Foundations of Electricity Market Design (participant)
2021	SIAM Conference on Optimization (OP21) (speaker) IISE Annual Conference & Expo Presentation (speaker)
2020	Data Fest Moscow 2020 (speaker) Workshop on Smart Cities Optimization (participant)
2019	ICCOPT, International conference on continuous optimization (speaker)
2018	ISMP, International congress of mathematical optimization (speaker, session organizer)
2017	Oberwolfach Workshop 1744b on Copositivity and Complete Positivity (speaker) LAGOS, IX Algorithms, Graphs and Optimization Symposium (speaker) IFORS, Conference of the international federation of operational research societies (speaker) EUROPT Workshop on Advances in Continuous Optimization (speaker)
2016	ICCOPT, International conference on continuous optimization (speaker)

## Visits

March 2023 (expected)	University of Montpellier; host: Michaël Poss
May – June 2018	Lehigh University; host: Luis F. Zuluaga
April 2018	Delft University of Technology; host: Fernando M. de Oliveira Filho
March 2018	Trier University; host: Mirjam Dür

## Other

- Dutch University Teaching Qualification (UTQ) 2022.  
The UTQ is evidence of the teaching skills required by Dutch universities. Lecturers study the university course development and then present a course and a portfolio reflecting their educational principles and the course building blocks.
- IT: Regular user of MS Office, L<sup>A</sup>T<sub>E</sub>X, Matlab, Python, AIMMS. Some experience with Github, Julia, Jupiter Notebook, R, SQL, Stata
- Languages: Russian – native, English – fluent, Dutch – advanced, German – basic
- Refereeing: Journal of Global Optimization, Journal of Optimization Theory and Applications, SN Operations Research Forum
- Operations Research Seminar organizer at Erasmus University Rotterdam, 2020 – present
- Conference session organizer: ISMP 2018, “Copositive and completely positive optimization”, ICCOPT 2022, “Polynomial optimization”