

# Curriculum Vitae

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ORCID Id

## 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*  
*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. Submitted.
- **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 and demand response agents on electricity market emissions under varying market conditions
- Optimal bidding strategies for battery and demand response agents
- 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

- 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)  
Oberwolfach Workshop 1744b on Copositivity and Complete Positivity (speaker)
- 2017 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

- 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,  $\text{\LaTeX}$ , 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”
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