

Frans J. C. T. de Ruiter

CONTACT INFORMATION	<i>E-mail:</i> fjctderuiter a t gmail dot com <i>Web:</i> www.fransderuiter.com
EDUCATION	Tilburg University , Tilburg, The Netherlands PhD. cum laude, Operations Research, January 2018. <i>Advisors:</i> Dick den Hertog, Ruud Brekelmans (Tilburg University) and Dimitris Bertsimas (MIT). MSc. cum laude, Management Science and Operations Research, September, 2013. BSc. cum laude, Econometrics and Operations Research, September, 2012. London School of Economics , London, UK MSc. highest distinction, Applicable Mathematics, September, 2014.
RESEARCH INTERESTS	Combining machine learning with optimization algorithms, adaptive and robust optimization, huge scale, real-world optimization.
RESEARCH VISITS	Massachusetts Institute of Technology (MIT) , Cambridge MA, USA, spring and summer of both 2015 and 2016. <i>Visiting Researcher</i> Advisor: Dimitris Bertsimas Technion, Israel Institute of Technology , Haifa, Israel, spring 2017. <i>Visiting Researcher</i> Advisor: Aharon Ben-Tal
RESEARCH IMPACT AND WORK EXPERIENCE	CQM , Eindhoven, The Netherlands, November 2017 - Present. <i>Operations Research Consultant</i> A selection of projects I have led : <ul style="list-style-type: none">• Taxi ride combinations. A state-of-the-art algorithm saved 100,000 driving kilometers per day and improved customer satisfaction for elderly and disabled citizens under the the Valys contract. Presentation viewable at analyticsbw.org/webinar-4.• (Online) food retail warehousing. Developed a framework to improve efficiency using analytics for the leading Dutch supermarket chain. Also advised on algorithm designs to reduce the number of load carriers in a new robotized warehouse.• Matching perishable commodities. Led a project transforming to a data-driven way of working, including the matching algorithm for a major trading organization in perishable commodities. ASML , Veldhoven, The Netherlands, November 2014 - April 2015. <i>Academic consultant</i> I made a prototype for a robust model to support decision making for the required capacity of the key suppliers.

JOURNAL
PUBLICATIONS

Robust optimization for models with uncertain SOC and SDP constraints, J. Zhen, E. Roos, F.J.C.T. de Ruiter and D. den Hertog, *To appear in INFORMS Journal on Computing*, 2020.

Robust optimization of uncertain multistage inventory systems with inexact data in decision rules, F.J.C.T. de Ruiter, A. Ben-Tal, R.C.M. Brekelmans and D. den Hertog, *Computational Management Science*, 14 (1), p45-66, 2017.

Duality in two-stage adaptive linear optimization: faster computation and stronger bounds, D. Bertsimas and F.J.C.T. de Ruiter, *INFORMS Journal on Computing*, 28 (3), p500-511, 2016.

The impact of the existence of multiple adjustable robust solutions, F.J.C.T. de Ruiter, R.C.M. Brekelmans and D. den Hertog, *Mathematical Programming A*, 160 (1), p531-545, 2016.

Applications of integer programming methods to cages, F.J.C.T. de Ruiter and N.L. Biggs, *The Electronic Journal of Combinatorics*, 22 (4) p4.35, 2015.

CURRENT
WORKING PAPERS

Dual approach for two-stage robust nonlinear optimization, F.J.C.T. de Ruiter, J. Zhen and D. den Hertog, *working paper*.

Tractable approximation of hard uncertain optimization problems, E. Roos, D. den Hertog, A. Ben-Tal, F.J.C.T. de Ruiter and J. Zhen, *submitted to Operations Research*.

Improved decision rules in robust optimization by lifted uncertainty sets, F.J.C.T. de Ruiter and A. Ben-Tal, *working paper*.

INVITED TALKS

- Society of Decision Professionals, San Francisco Chapter Meeting (Online), September 2020
- Analytics for a Better World Webinar (Online), August 2020
- Optimization Seminar TU Delft (Delft, The Netherlands), February 2020
- ICCOPT (Berlin, Germany), August 2019
- ISMP (Bordeaux, France), July 2018
- Workshop Robust Optimization (Avignon, France), June 2018
- INFORMS (Houston, USA), October 2017
- Computational Management Science Conference (Bergamo, Italy), June 2017
- SIAM (Vancouver, Canada), May 2017
- Dutch Mathematical Conference (Utrecht, The Netherlands), April 2017
- AP Seminar IBM Watson (New York, USA), November 2016
- INFORMS (Nashville, USA), November 2016
- ICCOPT (Tokyo, Japan), August 2016
- Optimization Days Conference (HEC Montreal, Canada), May 2016
- Research Seminar Erasmus University, (Rotterdam, The Netherlands), February 2016
- LNMB (Lunteren, The Netherlands), January 2016
- ISMP (Pittsburgh, USA), July 2015
- LNMB (Lunteren, The Netherlands), January 2015
- APMOD (Warwick, UK), April 2014
- VVS-OR Annual Meeting (Utrecht, The Netherlands), March 2014
- Management Science Seminar (LSE London, UK), March 2014

TEACHING
EXPERIENCE

PhD courses

LNMB

Robust Optimization, partly online in 2020.

Professional courses

CQM

Optimization course for JADS Data Science Expert Program (evaluation 4.5/5). Supervised several master student theses that combined deep learning and optimization algorithms.

Graduate courses

Tilburg University

Analytics for Business and Governance (evaluation 4.8/5) and supervision of a master thesis student on robust vehicle planning (student won the Dutch Logistics thesis award).

Undergraduate courses

Tilburg University

Linear Optimization (evaluation 4.4/5) and Premaster Statistics (evaluation 4.4/5).

PROFESSIONAL
SERVICE

Reviewer for *Management Science*, *Operations Research*, *Mathematical Programming*, *Operations Research Letters*, *Omega*, *European Journal of Operational Research*.

HONORS AND
AWARDS

VVS-OR Van Zwet Award Honorable Mention 2018

My thesis received the honorable mention during the annual meeting of the Dutch Society for Statistics and Operations Research.

INFORMS Optimization Society Best Student Paper Prize 2017.

The paper “Duality in Two-Stage Adaptive Linear Optimization: Faster Computation and Stronger Bounds” was awarded the first prize at the INFORMS annual meeting in Houston 2017.

Finalist for the KWG prize 2017.

Finalist among all mathematics PhD students, where I presented my PhD findings at the annual Dutch Mathematical Congress.

NWO Research Talent Grant, 2014-2017.

Competitive research grant for PhD students to fully fund my PhD research by the Netherlands Organization for Scientific Research (NWO).

APMOD 2014 best student paper prize, 2014.

First place in the student paper competition for the paper “Robust Optimization of uncertain multistage inventory systems with inexact data in decision rules”.

Haya Freedman Dissertation Prize, 2014.

Prize for the best MSc thesis, written in the mathematics department at the London School of Economics, during the academic year 2013-2014.

VVS-OR master thesis prize 2014.

Prize for the best MSc thesis written in the Netherlands (while at Tilburg University) in the areas of Statistics and Operations Research.

COMPUTER SKILLS

Languages: C++.

Scientific Computing: Python, Matlab and an enthusiastic early adopter of the Julia language.