Frans J. C. T. de Ruiter

CONTACT INFORMATION

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EDUCATION

Tilburg University, Tilburg, The Netherlands

PhD. cum laude, Operations Research, January 2018.
Advisors: 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 multistage optimization, Real-world optimization applications.

RESEARCH VISITS

Massachusetts Institute of Technology (MIT), Cambridge MA, USA, spring and summer of both 2015 and 2016.
Visiting Researcher
Advisor: Dimitris Bertsimas

Technion, Israel Institute of Technology, Haifa, Israel, spring 2017.
Visiting Researcher
Advisor: Aharon Ben-Tal

RESEARCH IMPACT AND WORK EXPERIENCE

CQM, Eindhoven, The Netherlands, November 2017 - Present.
Data science research consultant
Aiding companies with implementing data science solutions to transform to a data-driven way of working. I have developed several practical optimization and machine learning algorithms.

ASML, Veldhoven, The Netherlands, November 2014 - April 2015.
Academic consultant
I made a prototype for a robust model to support decision making for the required capacity of the key suppliers.

PHD PUBLICATIONS

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 (3) p.4.35, 2015.

Current working papers

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

Robust optimization for models with uncertain SOC and SDP constraints, J. Zhen, E. Roos, F.J.C.T. de Ruiter and D. den Hertog, ***Working paper***.

Approximation of hard uncertain convex inequalities, E. Roos, D. den Hertog, A. Ben-Tal, F.J.C.T. de Ruiter and J.Zhen, ***Working paper***.

Dual approach for two-stage robust nonlinear optimization, F.J.C.T. de Ruiter, J. Zhen and D. den Hertog, ***Submitted to Operations Research***.

Invited Talks

- 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

Undergraduate courses
Tilburg University
Linear Optimization (evaluation 4.4/5) and Premaster Statistics (evaluation 4.4/5).

Graduate courses
Tilburg University
Analytics for Business and Governance (evaluation 4.8/5) and supervision of a master thesis in robust vehicle planning.

Professional courses
CQM
Optimization course for JADS Data Science Expert Program (evaluation 4.5/5) and a company supervision of a research master student thesis combining deep learning and optimization algorithms.

Professional Service

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

Honors and awards

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 Congres.

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.