

Curriculum Vitae

Personal data

Name: Twan Dollevoet
Date of birth: May 19, 1983
Place of birth: Nuland, the Netherlands
Nationality: Dutch

Address: Econometric Institute
Erasmus School of Economics
Erasmus University Rotterdam
P.O. Box 1738
3000 DR Rotterdam
The Netherlands

Phone number: +31 10 754 5277
E-mail: dollevoet@ese.eur.nl
Website: <https://personal.eur.nl/dollevoet>



Professional Experience

- 2018-present: Associate professor at Econometric Institute, Erasmus University Rotterdam, the Netherlands
- 2013-2018: Assistant professor at Econometric Institute, Erasmus University Rotterdam, the Netherlands
- 2008-2012: Ph.D. Candidate at Erasmus Research Institute of Management (ERIM), Erasmus University Rotterdam, the Netherlands
- 2008-2012: Researcher at Process quality & Innovation, Netherlands Railways, the Netherlands
- 2003-2007: Student assistant at Utrecht University, the Netherlands

Education

- 2013: Ph.D. degree in Operations Research, Erasmus University Rotterdam, the Netherlands
- 2007: Master's degree in Econometrics and Management Science, Erasmus University Rotterdam, the Netherlands
- 2007: Master's degree in Mathematics, Utrecht University, the Netherlands
- 2007: Master's degree in Theoretical Physics, Utrecht University, the Netherlands
- 2006: Bachelor's degree in Computer Science, Utrecht University, the Netherlands

Societal impact

- Together with Bart van Rossum, Danny Zhu, and Dennis Huisman, I work on new approaches and solution methods for planning problems of railway operators. For this work, we collaborate closely with Netherlands Railways, the largest passenger operator of the Netherlands.
- Together with Roby Cremers, Michal Mankowski (NYU Grossman School of Medicine), Joris van de Klundert (Universidad Adolfo Ibanez), and Albert Wagelmans, I work on kidney transplantation policies. Moreover, together with researchers from Erasmus MC, I work on the evaluation of a new allocation policy that is going to be used in the Netherlands in the coming years.

Honors and Awards

- First prize in the 2010 Student Research Paper Contest on Management Science in Railroad Applications (RAS) with the paper “Delay Management with Rerouting of Passengers” with Dennis Huisman, Marie Schmidt, and Anita Schöbel.
- Top Researcher Award 2015, Erasmus School of Economics, Erasmus University Rotterdam.
- High-performance member of Erasmus Research Institute of Management (ERIM), since 2017.
- PhD student Thomas Breugem has won the first prize in the 2017 RAS Student Paper Award contest on analytics and fact-based decision making in railway applications for the paper “An Optimization Framework for Fairness-oriented Crew Rostering”.
- PhD student Rowan Hoogervorst has won the second prize in the 2020 RAS Student Paper Award contest on analytics and fact-based decision making in railway applications for the paper “Integrated Rolling Stock and Shunting Driver Rescheduling”.
- Top Educational Innovation Award 2022, Erasmus School of Economics, Erasmus University Rotterdam.
- PhD student Bart van Rossum has won the first prize in the 2022 RAS Student Paper Award contest on analytics and fact-based decision making in railway applications for the paper “Operational Railway Crew Planning with Individual Sharing-sweet-and-sour Rules”.

Teaching Experience

- 2022-present: Data Structures and Algorithms (Coordinator and lecturer)
- 2020-present: Transportation and Scheduling (Coordinator and lecturer)
- 2018-present: Matrix algebra (Coordinator and lecturer)
- 2013-present: Thesis supervision of master students (Supervisor)
- 2013-present: Thesis supervision of bachelor students (Supervisor and coordinator)
- 2017-2018: Mathematical Programming (Coordinator and lecturer)
- 2016, 2018: Seminar Logistic Case Studies (Together with D. Huisman)
- 2017-2018: Analyse / Analysis (Coordinator and lecturer)
- 2015-2016: Analyse 2 / Calculus 2 (Coordinator and lecturer)
- 2013-2016, 2020-2021: Wiskundige Methoden / Mathematical Methods (Coordinator and lecturer)

Publications

Published papers and chapters

- Bart van Rossum, Twan Dollevoet, and Dennis Huisman: “Railway Crew Planning with Fairness over Time” (2024) *European Journal of Operational Research* 318:1 pp. 55-70. doi:10.1016/j.ejor.2024.04.029
- Twan Dollevoet and Dennis Huisman: “Column Generation and Lagrangian Relaxation: Solving real-world crew (re)scheduling problems” (2024). In: F. Hamid (Ed.) *Optimization Essentials: Theory, Tools, and Applications* Singapore: Springer.
- Marelott de Vos, Rolf van Lieshout, and Twan Dollevoet: “Electric Vehicle Scheduling in Public Transit with Capacitated Charging Stations” (2024) *Transportation Science* 58:2 pp. 279-294. doi:10.1287/trsc.2022.0253
- Twan Dollevoet and Remy Spliet: “Preprocessing to reduce vehicle capacity for routing problems” (2023) *Operations Research Forum* 4:42. doi:10.1007/s43069-023-00220-9

- Thomas Breugem, Twan Dollevoet, and Dennis Huisman: “Is Equality always desirable? Analyzing the Trade-Off between Fairness and Attractiveness in Crew Rostering” (2022) *Management Science* 68:4 pp. 2619–2641. doi:10.1287/mnsc.2021.4005
- Thomas Breugem, Bart van Rossum, Twan Dollevoet, and Dennis Huisman: “A Column Generation Approach for the Integrated Crew Re-Planning Problem” (2022) *Omega* 107:102555. doi:10.1016/j.omega.2021.102555
- Shyam Sundar Govindaraja Perumal, Twan Dollevoet, Dennis Huisman, Richard M Lusby, Jesper Larsen, and Morten Riis: “Solution Approaches for Integrated Vehicle and Crew Scheduling with Electric Buses” (2021) *Computers & Operations Research* 132:105268. doi:10.1016/j.cor.2021.105268
- Rowan Hoogervorst, Twan Dollevoet, Gábor Maróti, and Dennis Huisman: “A Variable Neighborhood Search Heuristic for Rolling Stock Rescheduling” (2021) *EURO Journal on Transportation and Logistics* 10:100032. doi:10.1016/j.ejtl.2021.100032
- Rowan Hoogervorst, Twan Dollevoet, Gábor Maróti, and Dennis Huisman: “Reducing Passenger Delays by Rolling Stock Rescheduling” (2020) *Transportation Science* 54:3 pp. 762–784. doi:10.1287/trsc.2019.0968
- Gert-Jaap Polinder, Thomas Breugem, Twan Dollevoet, and Gábor Maróti: “An Adjustable Robust Optimization Approach for Periodic Timetabling” (2019) *Transportation Research Part B: Methodological* 128 pp. 50–68. doi:10.1016/j.trb.2019.07.011
- Twan Dollevoet, Dennis Huisman, Marie Schmidt, and Anita Schöbel: “Delay propagation and delay management in transportation networks” (2018). In: R. Borndörder, T. Klug, L. Lamorgese, C. Mannino, M. Reuther, and T. Schlechte (Eds.) *Handbook of Optimization in the Railway Industry* (International Series in Operations Research & Management Science, 268) pp. 285–317, Cham. doi:10.1007/978-3-319-72153-8_13
- Chongshuang Chen, Twan Dollevoet, and Jun Zhao: “One-block train formation in large-scale railway networks: An exact model and a tree-based decomposition algorithm” (2018) *Transportation Research Part B: Methodological* 118 pp. 1–30. doi:10.1016/j.trb.2018.10.003
- Twan Dollevoet, Theresia van Essen, and Kristiaan Glorie: “Solution methods for the tray optimization problem” (2018) *European Journal of Operational Research* 271:3 pp. 1070–1084. doi:10.1016/j.ejor.2018.05.051
- Twan Dollevoet, Dennis Huisman, Leo G. Kroon, Lucas P. Veelenturf, and Joris C. Wagenaar: “Application of an Iterative Framework for Real-time Railway Rescheduling” (2017) *Computers & Operations Research* 78 pp. 203–217. doi:10.1016/j.cor.2016.08.011
- Thomas Breugem, Twan Dollevoet, and Wilco van den Heuvel: “Analysis of FPTASes for the multi-objective shortest path problem” (2017) *Computers & Operations Research* 78 pp. 44–58. doi:10.1016/j.cor.2016.06.022
- Lukas Bach, Twan Dollevoet, and Dennis Huisman: “Integrating Timetabling and Crew Scheduling at a Freight Railway Operator” (2016) *Transportation Science* 50:3 pp. 878–891. doi:10.1287/trsc.2015.0648
- Egidio Quaglietta, Paola Pellegrini, Rob M.P. Goverde, Thomas Albrecht, Birgit Jaekel, Grégory Marlière, Joaquin Rodriguez, Twan Dollevoet, Bruno Ambrogio, Daniele Carcasole, Marco Giaroli, and Gemma Nicholson: “The ON-TIME real-time railway traffic management framework: a proof-of-concept using a scalable standardised data communication architecture” (2016) *Transportation Research Part C: Emerging Technologies* 63 pp. 23–50. doi:10.1016/j.trc.2015.11.014
- Willem van Jaarsveld, Twan Dollevoet, and Rommert Dekker: “Spare parts inventory control for an aircraft component repair shop” (2015) *Omega* 57, Part B pp. 217–229. doi:10.1016/j.omega.2015.05.002

- Twan Dollevoet, Dennis Huisman, Leo Kroon, Marie Schmidt, and Anita Schöbel: “Delay Management including Capacities of Stations” (2015) *Transportation Science* 49:2 pp. 185–203. doi:10.1287/trsc.2013.0506
- Twan Dollevoet, Francesco Corman, Andrea D’Ariano, and Dennis Huisman: “An iterative optimization framework for delay management and train scheduling” (2014) *Flexible Services and Manufacturing* 26:4 pp. 490–515. doi:10.1007/s10696-013-9187-2
- Twan Dollevoet and Dennis Huisman: “Fast heuristics for delay management with passenger rerouting” (2014) *Public Transport* 6:1-2 pp. 67-84. doi:10.1007/s12469-013-0076-6
- Lanah Evers, Twan Dollevoet, Ana Isabel Barros, and Herman Monsuur: “Robust UAV Mission Planning” (2014) *Annals of Operations Research* 222:1 pp. 293–315. doi:10.1007/s10479-012-1261-8
- Twan Dollevoet, Dennis Huisman, Marie Schmidt, and Anita Schöbel: “Delay Management with Rerouting of Passengers” (2012) *Transportation Science* 46:1 pp. 74-89. doi:10.1287/trsc.2013.0506
- Erwin Abbink, Luis Albino, Twan Dollevoet, Dennis Huisman, Jorge Roussado, and Ricardo Saldanha: “Solving Large Scale Crew Scheduling Problems in Practice” (2011) *Public Transport* 3:2 pp. 149-164. doi:10.1007/s12469-011-0045-x

Ph.D. thesis

- Twan Dollevoet: “Delay Management and Dispatching in Railways” (2013) Ph.D. thesis, ERIM, Erasmus University Rotterdam.

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