Martijn R.K. **Mes**

Full Professor Transportation and Logistics Management

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"Logistics Engineering for Society: Improve liveability, sustainability, and profitability through smart planning and automation."

Summary

I am a full professor of Transportation and Logistics Management (TLM) and chair of the Industrial Engineering and Business Information Systems (IEBIS) section within the High Tech Business and Entrepreneurship (HBE) department at the University of Twente (Enschede, The Netherlands). I have a master's degree in Applied Mathematics (2002) and did my PhD at the School of Management and Governance, University of Twente (2008). Afterwards, I did my postdoc at Princeton University, Department of Operations Research and Financial Engineering, where I did research on the topics of Ranking and Selection (R&S), Bayesian Global Optimization (BGO), and Optimal Learning. In general, my research is on optimization and artificial intelligence for transportation and logistics, including aspects like synchromodal transport, urban logistics, multi-agent systems (MAS), dynamic vehicle routing problems (VRP & DVRP), ranking and selection problems (R&S), optimal learning, approximate dynamic programming (ADP), Deep Reinforcement Learning (DRL), Machine Learning (ML), Discrete-Event Simulation (DES), and Simulation Optimization (SO). I have participated in a large variety of research and implementation projects (national as well as European) on the topics of sustainable logistics, urban logistics, port logistics, and intermodal and synchromodal transport.

Education

University of Twente — *Enschede, The Netherlands*

PhD in Industrial Engineering & Management — *2003 - 2008*

- School of Management and Governance, Department Operational Methods for Production and Logistics
- Thesis: *Sequential Auctions for Full Truckload Allocation* · Promotor: Prof. dr. ir. J.H.A. de Smit

University of Twente — *Enschede, The Netherlands*

MSc in Applied Mathematics — *1995 - 2002*

- Faculty of Applied Mathematics, Department Discrete Mathematics and Mathematical Programming
- Thesis: *Optimal Control of Multi-Echelon Systems*

Employment history

University of Twente — *Enschede, The Netherlands*

Full Professor — *2022 - PRESENT*

- Faculty of Behavioural, Management and Social sciences, Department High-Tech Business and Entrepreneurship, Section Industrial Engineering and Business Information Systems

University of Twente — *Enschede, The Netherlands*

Associate Professor — *2016 - 2022*

- Faculty of Behavioural, Management and Social sciences, Department Industrial Engineering and Business Information Systems
- From November 1, 2019 onwards, I have the right to confer doctorates (ius promovendi)

University of Twente — *Enschede, The Netherlands*

Assistant Professor — *2008 - 2016*

- School of Management and Governance, Department Operational Methods for Production and Logistics

Princeton University — *Princeton, USA*

Postdoc — *2008*

- Department of Operations Research and Financial Engineering, School of Engineering and Applied Science
- The Dutch Research Council (NWO) awarded me a Rubicon grant for research at Princeton University on the topic of "Dynamic fleet management in a competitive environment". Reference: Prof. Warren B. Powell · powell@princeton.edu

University of Twente

Enschede, The Netherlands

Lecturer

2006–2008

- School of Management and Governance, Department Operational Methods for Production and Logistics
- For 0.5FTE next to my position as PhD candidate

University of Twente

Enschede, The Netherlands

PhD Candidate

2003 - 2008

- School of Management and Governance, Department Operational Methods for Production and Logistics
- This PhD project was part of the Transumo (TRANsition SUstainable MObility) research program Diploma (DIstributed PLanning Of freight transport networks using Multi-Agent technology)
- Last two years for 0.5FTE next to my position as lecturer

University of Twente

Enschede, The Netherlands

Researcher

2002 - 2003

- School of Management and Governance, Department Operational Methods for Production and Logistics
- Writing a PhD research proposal

Publications

Journal:

- M. Brunetti, M.R.K. Mes, E. Lalla-Ruiz (2024). Smart Logistics Nodes: Concept and Classification. International Journal of Logistics Research and Applications. [download]
- B. Gerrits, W. van Heeswijk, and M.R.K. Mes (2023). Towards self-organizing logistics in transportation: a literature review and typology. International Transactions in Operational Research. [download]
- R. van Steenbergen, W. Heeswijk, and M.R.K. Mes (2023). Reinforcement learning for humanitarian relief distribution with trucks and UAVs under travel time uncertainty. Transportation Research Part C. [download]
- A.C. Morim, G. Campuzano, P. Amorim, M.R.K. Mes, and E. Lalla-Ruiz (2023). The Drone-Assisted Vehicle Routing Problem with Robot Stations. Expert Systems with Applications. [download]
- B. Gerrits, M.R.K. Mes, and R. Andringa (2023). A Simulation Model for Bio-Inspired Charging Strategies for Electric Vehicles in Industrial Areas. In Proceedings of the 2023 Winter Simulation Conference, edited by C.G. Corlu, S. Hunter, S. Onggo, H. Lam. Piscataway, New Jersey: IEEE.
- Koot, M., Mes M.R.K., and M.E. Iacob (2023) Building an Ontological Bridge Between Supply Chain Resilience and IoT Applications. In: D. Karastoyanova et al. (eds) EDOC 2023. Lecture Notes in Computer Science, vol 14367. Springer, Cham.
- K. Geevers, L. van Hezewijk, and M.R.K. Mes (2023). Multi-Echelon Inventory Optimization using Deep Reinforcement Learning. Central European Journal of Operations Research. [download]
- R. Boschma, M.R.K. Mes, and L. de Vries (2023). Approximate Dynamic Programming for Container Stacking. European Journal of Operational Research. [download]
- Pourmehdi, M., Iacob, M.E., Mes, M.R.K. (2023). Towards a Reference Architecture for Planning and Control Services. In: Griffo, C., Guerreiro, S., Iacob, M.E. (eds) Advances in Enterprise Engineering XVI. EEWC 2022. Lecture Notes in Business Information Processing, vol 473. Springer, Cham. [download]
- Campuzano, G., E. Lalla-Ruiz, and M.R.K. Mes (2023). The Drone-Assisted Variable Speed Asymmetric Traveling Salesman Problem. Computers & Industrial Engineering. [download]
- F. Akkerman, M.R.K. Mes, and E. Lalla-Ruiz (2022). Dynamic Time Slot Pricing Using Delivery Costs Approximations. In Computational Logistics – ICCL2022, Lecture Notes in Computer Science, edited by de Armas, J., Ramalhinho, H., Voß, S. (eds), pp. 214-230. Springer. [download]
- Campuzano, G., Lalla-Ruiz, E., Mes, M. (2022). The Dynamic Drone Scheduling Delivery Problem. In Computational Logistics – ICCL2022, Lecture Notes in Computer Science, edited by de Armas, J., Ramalhinho, H., Voß, S. (eds), pp. 260-274. Springer. [download]
- A. Asadi, S.N. Pinkley, and M.R.K. Mes (2022). A Markov Decision Process Approach for Managing Medical Drone Deliveries. Expert Systems with Applications 204, 117490. [download]
- F. Akkerman, M.R.K. Mes (2022). Distance Approximation to Support Customer Selection in Vehicle Routing Problems. Annals of Operations Research. [download]
- A.E. Pérez Rivera, M.R.K. Mes (2022). Anticipatory Scheduling of Synchromodal Transport using Approximate Dynamic Programming. Annals of Operations Research. [download]
- Gil A.F., Lalla-Ruiz E., Mes M., Castro C. (2021) Optimization of Green Pickup and Delivery Operations in Multi-depot Distribution Problems. In: Mes M., Lalla-Ruiz E., Voß S. (eds) Computational Logistics. ICCL 2021. Lecture Notes in Computer Science, vol 13004. Springer, Cham. [download]
- Campuzano G., Lalla-Ruiz E., Mes M. (2021) A Multi-start VNS Algorithm for the TSP-D with Energy Constraints. In: Mes M., Lalla-Ruiz E., Voß S. (eds) Computational Logistics. ICCL 2021. Lecture Notes in Computer Science, vol 13004. Springer, Cham. [download]
- C. Castiglione, D.M. Yazan, A. Alfieri, and M.R.K. Mes (2020). A Holistic Technological Eco-innovation Methodology for Industrial Symbiosis Development. Sustainable Production and Consumption. [download]
- M. Koot, M-E. Iacob, M.R.K. Mes (2021). A Reference Architecture for IoT-Enabled Dynamic Planning in Smart Logistics. 33rd International Conference on Advanced Information Systems Engineering, CAiSE 2021, pp. 551-565. [download]
- R. van Steenbergen, M. Brunetti, and M.R.K. Mes (2021). Network Generation for Simulation of Multimodal Logistics Systems. WSC2021.
- M. Koot, M.R.K. Mes, and M.E. Iacob (2020). A Systematic Literature Review of Supply Chain Decision Making supported by the Internet of Things and Big Data Analytics. Computers & Industrial Engineering 154, 107076. [download]
- R. van Steenbergen and M.R.K. Mes (2020). Forecasting Demand Profiles of New Products. Decision Support Systems 139, 113401. [download]
- M.R.K. Mes, I.M.H. Vliegen, and C.J.M. Doggen (2021). A quantitative analysis of integrated emergency posts. In Handbook of Healthcare Logistics - Bridging the Gap between Theory and Practice, edited by M.E. Zonderland, R.J. Boucherie, E.W. Hans, and N. Kortbeek. Springer International Series in Operations Research & Management Science, vol 302. [download]

- E. Lalla-Ruiz and M.R.K. Mes (2021). Mathematical formulations and improvements for the multi-depot open vehicle routing problem. Optimization Letters 15, pp. 271–286. [download]
- F. Akkerman and M.R.K. Mes (2020). Distance Approximation for Dynamic Waste Collection Planning. In Computational Logistics – ICCL2020, Lecture Notes in Computer Science, edited by E.A. Lalla, M.R.K. Mes, and S. Voss, pp. 356-370. Springer. [download]
- M.R.K. Mes and W. van Heeswijk (2020). Comparison of Manual and Automated Decision-Making with a Logistics Serious Game. In Computational Logistics – ICCL2020, Lecture Notes in Computer Science, edited by E.A. Lalla, M.R.K. Mes, and S. Voss, pp. 698-714. Springer. [download]
- T. van Benthem, M. Bergman, and M.R.K. Mes (2020). Solving a Bi-Objective Rich Vehicle Routing Problem with Customer Prioritization. In Computational Logistics – ICCL2020, Lecture Notes in Computer Science, edited by E.A. Lalla, M.R.K. Mes, and S. Voss, pp. 183-199. Springer. [download]
- M. Brunetti, M.R.K. Mes, and J. van Heuveln (2020). A Generic Simulation Framework for Smart Yards. In Proceedings of the 2020 Winter Simulation Conference, edited by K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing. Piscataway, New Jersey: IEEE.
- R. van Steenbergen and M.R.K. Mes (2020). A Simulation Framework for UAV-Aided Humanitarian Logistics. In Proceedings of the 2020 Winter Simulation Conference, edited by K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing. Piscataway, New Jersey: IEEE.
- B. Gerrits, M.R.K. Mes, and P.C. Schuur (2020). Mixing it up: Simulation of Mixed Traffic Container Terminals. In Proceedings of the 2020 Winter Simulation Conference, edited by K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing. Piscataway, New Jersey: IEEE.
- R. Bemthuis, M.R.K. Mes, M-E. Iacob, and P. Havinga (2020). Using Agent-based Simulation for Emergent Behavior Detection in Cyber-physical Systems. In Proceedings of the 2020 Winter Simulation Conference, edited by K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing. Piscataway, New Jersey: IEEE.
- I.O. Ryzhov, M.R.K. Mes, W.B. Powell, G.A. van den Berg (2019). Bayesian Exploration for Approximate Dynamic Programming. Operations Research 67(1), pp. 198-214. [download]
- W.J.A. van Heeswijk, M.R.K. Mes, J.M.J. Schutten, and W.H.M. Zijm (2019). Evaluating Urban Logistics Schemes Using Agent-based Simulation. Transportation Science 54(3), pp. 651–675. [download]
- A.E. Pérez Rivera, M.R.K. Mes and J. van Hillegersberg (2019). A Simulation Game for Anticipatory Scheduling of Synchromodal Transportation, in: Hamada, R., Soranastaporn, S., Kanegae, H., Dumrongrojwatthana, P., Chaisanit, S., Rizzi, P., Dumblekar, V. (eds), Neo-Simulation and Gaming Toward Active Learning, Springer Translational Systems Sciences 18.
- Bemthuis, R.H., Koot, M., Mes, M.R.K., Bukhsh, F.A., Iacob, M.-E, and Meratnia, N (2019). An agent-based process mining architecture for emergent behavior analysis. In 2019 IEEE 23rd International Enterprise Distributed Object Computing Workshop (EDOCW). IEEE, in press.
- M.R.K. Mes and M. Koot (2019). Simulation Solution Validation for an Integrated Emergency Post. In Proceedings of the 2019 Winter Simulation Conference, edited by N. Mustafee, M. Rabe, K.-H.G. Bae, C. Szabo, S. Lazarova-Molnar. Piscataway, New Jersey: IEEE.
- B. Gerrits, M.R.K. Mes and P. Schuur (2019). Simulation of Real-Time and Opportunistic Truck Platooning at the Port of Rotterdam. In Proceedings of the 2019 Winter Simulation Conference, edited by N. Mustafee, M. Rabe, K.-H.G. Bae, C. Szabo, S. Lazarova-Molnar. Piscataway, New Jersey: IEEE.
- A.E. Pérez Rivera, M.R.K. Mes (2019). Integrated scheduling of drayage and long-haul operations in synchromodal transport. Flexible Services and Manufacturing 31, pp. 763–806. [download]
- W. Chen, M.R.K. Mes, J.M.J. Schutten, and J. Quint (2019). A ride-sharing problem with meeting points and return restrictions. Transportation Science 53(2), pp. 319-622. [download]
- I.A. Bikker, Martijn Mes, Antoine Sauré, and Richard J. Boucherie (2018). Online capacity planning for rehabilitation treatments: an approximate dynamic programming approach. Probability in the Engineering and Informational Sciences 34(3), pp. 381-405. [download]
- B. Gerrits, M.R.K. Mes, P.C. Schuur (2018). A Simulation Model for the Planning and Control of AGVs at Automated Container Terminals. In Proceedings of the 2018 Winter Simulation Conference, edited by M. Rabe, A. Skoogh, N. Mustafee, and A.A. Juan. Piscataway, New Jersey: IEEE.
- D.M. Yazan, D. Cafagna, M.R.K. Mes, L. Fraccascia, P. Ponfrandolfo, and H. Zijm (2018). Economic sustainability of biogas production from animal manure: A regional circular economy model. Management Research Review 41(5), pp. 605-624. [download]
- D.M. Yazan, L. Fraccascia, M.R.K. Mes, H. Zijm (2018). Cooperation in manure-based biogas production networks: An agent-based modelling approach. Applied Energy 212, pp. 820-833. [download]
- B. Gerrits, M.R.K. Mes, P.C. Schuur (2017). An Agent-Based Simulation Model For Autonomous Trailer Docking. In Proceedings of the 2017 Winter Simulation Conference, edited by V. Chan, A. D'Ambrogio, G. Zacharewicz, and N. Mustafee. Piscataway, New Jersey: IEEE.
- A.E. Pérez Rivera, M.R.K. Mes (2017). Scheduling Drayage Operations in Synchromodal Transport. In T. Bektas et al. (Eds.), Computational Logistics – ICCL 2017, Lecture Notes in Computer Science, pp. 404-419. Springer. [download]
- W.J.A. van Heeswijk, M.R.K. Mes, and J.M.J. Schutten (2017). The delivery dispatching problem with time windows for urban consolidation centers. Transportation Science 53(1), pp. 203–22. [download]
- M.R.K. Mes, A.E. Pérez Rivera (2017). Approximate Dynamic Programming by Practical Examples. In: Richard Boucherie and Nico M. van Dijk (Eds.), Markov Decision Processes in Practice. International Series in Operations Research & Management Science (248). Springer. ISBN 9783319477664.
- W. Chen, M.R.K. Mes, and J.M.J. Schutten (2016), Multi-hop driver-parcel matching problem with time windows. Flexible Services and Manufacturing Journal 30, pp. 517–553. [download]
- W.J.A. van Heeswijk, M.R.K. Mes, J.M.J. Schutten, and W.H.M. Zijm (2016). Freight consolidation in intermodal networks with reloads. Flexible Services and Manufacturing Journal 30, pp. 452–485. [download]
- A.E. Pérez Rivera, M.R.K. Mes (2016). Anticipatory Freight Selection in Intermodal Long-haul Round-trips. Transportation Research Part E: Logistics and Transportation Review 105, pp. 176-194. [download]
- M.R.K. Mes and A.M. Douma (2016). Agent-Based Support for Container Terminals to make Appointments with Barges. In Paias, A., Ruthmair, M., and Voβ, S. (Eds.), Computational Logistics – ICCL 2016, Lecture Notes in Computer Science, pp. 80-95. Springer. [download]
- W.J.A. van Heeswijk, M.R.K. Mes, and M. Schutten (2016). An Agent-Based Simulation Framework to evaluate Urban Logistics Schemes. In Paias, A., Ruthmair, M., and Voβ, S. (Eds.), Computational Logistics – ICCL 2016, Lecture Notes in Computer Science, pp. 369-383. Springer. [download]
- A.E. Pérez Rivera, M.R.K. Mes (2016). Service and Transfer Selection for Freights in a Synchromodal Network. In Paias, A., Ruthmair, M., and Voβ, S. (Eds.), Computational Logistics – ICCL 2016, Lecture Notes in Computer Science, pp. 227-242. Springer. [download]
- D.M. Yazan, I. van Duren, M.R.K. Mes, S. Kersten, J. Clancy, H. Zijm (2016). Design of sustainable second-generation biomass supply chains. Biomass and Bioenergy 94, pp. 173-186. [download]
- N. Borgman, M.R.K. Mes, I.M.H. Vliegen, and E.W. Hans (2016). Improving the Design and Operation of an Integrated Emergency Post using

Simulation. In Mustafee, Navonil (Ed), Operational Research for Emergency Planning in Healthcare 1, pp. 164–189.
- P.J.H. Hulshof, M.R.K. Mes, R.J. Boucherie, E.W. Hans (2016). Patient admission planning using Approximate Dynamic Programming. Flexible Services and Manufacturing 28(1): pp. 30-61. [download]
- W. van Heeswijk, M.R.K. Mes, and M. Schutten (2015). An Approximate Dynamic Programming Approach to Urban Freight Distribution with Batch Arrivals. In Corman, F., Voβ, S., Negenborn, R.R. (Eds.), Computational Logistics – ICCL 2015, Lecture Notes in Computer Science, pp. 61-75. Springer. [download]
- A.E. Pérez Rivera, M.R.K. Mes (2015). Dynamic Multi-period Freight Consolidation. In Corman, F., Voβ, S., Negenborn, R.R. (Eds.), Computational Logistics – ICCL 2015, Lecture Notes in Computer Science, pp. 370-385. Springer. [download]
- M.R.K. Mes, M.-E. Iacob (2015). Synchromodal Transport Planning at a Logistics Service Provider. In Zijm, H., Klumpp, M., Clausen, U., Hompel, M.t. (Eds.), Logistics and Supply Chain Innovation - Bridging the Gap between Theory and Practice, Lecture Notes in Logistics, pp. 23–36. Springer Berlin Heidelberg.
- A. Dobrkovic, M.-E. Iacob, J. van Hillegersberg, M.R.K. Mes, and M. Glandrup (2015). Towards an Approach for Long Term AIS-Based Prediction of Vessel Arrival Times. In Zijm, H., Klumpp, M., Clausen, U., Hompel, M.t. (Eds.), Logistics and Supply Chain Innovation - Bridging the Gap between Theory and Practice, Lecture Notes in Logistics, pp. 281–294. Springer Berlin Heidelberg.
- R. van der Kooij, M.R.K. Mes, E.W. Hans (2014). Simulation Framework to Analyse Operating Room Release Mechanisms. In Proceedings of the 2014 Winter Simulation Conference, edited by A. Tolk, S. Y. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller. Piscataway, New Jersey: IEEE.
- T. van Dijk, M.R.K. Mes, J.M.J. Schutten, J. Gromicho (2014). A Unified Race Algorithm for Offline Parameter Tuning. In Proceedings of the 2014 Winter Simulation Conference, edited by A. Tolk, S. Y. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller. Piscataway, New Jersey: IEEE.
- M.R.K. Mes, J.M.J. Schutten, A.E. Pérez Rivera (2014). Inventory routing for dynamic waste collection. Waste Management 34(9), pp. 1564–1576. [download]
- N. Borgman, M.R.K. Mes, I.M.H. Vliegen, and E.W. Hans (2015). Improving the Design and Operation of an Integrated Emergency Post using Simulation. Journal of Simulation 9(2): 99-110. [download]
- R. van Urk, M.R.K. Mes, and E.W. Hans (2013). Anticipatory Routing of Police Helicopters. Expert Systems with Applications 40(17), pp. 6938–6947. [download]
- M.R.K. Mes, M.-E. Iacob, and J. van Hillegersberg (2013). A Distributed Barge Planning Game, In: S.A. Meijer, R. Smeds (eds), Frontiers in Gaming Simulation, Springer Lecture Notes in Computer Science, Vol. 8264, p 214-221.
- M.R.K. Mes, M.C. van der Heijden, and P.C. Schuur (2013). Interaction between intelligent agent strategies for real-time transportation planning. Central European Journal of Operations Research 21(2), pp. 337-358. [download]
- M.R.K. Mes and M. Bruens (2012). Simulation Modelling of an Integrated Emergency Post. In Proceedings of the 2012 Winter Simulation Conference, edited by C. Laroque, J. Himmelspach, R. Pasupathy, O. Rose, and A. M. Uhrmacher. Piscataway, New Jersey: IEEE.
- M.R.K. Mes, W.B. Powell, and P.I. Frazier (2011). Hierarchical Knowledge-Gradient for Sequential Sampling. Journal of Machine Learning Research 12(Oct), pp. 2931−2974.
- M.R.K. Mes, M.C. van der Heijden, and P.C. Schuur (2010). Look-ahead strategies for dynamic pickup and delivery problems. OR Spectrum 32(2), pp. 395-421. [download]
- M.R.K. Mes, M.C. van der Heijden, and P.C. Schuur (2009). Dynamic threshold policy for delaying and breaking commitments in transportation auctions. Transportation Research Part C 17(2), pp. 208-223. [download]
- M.R.K. Mes, M.C. van der Heijden, and Jos van Hillegersberg (2008). Design choices for agent-based control of AGVs in the dough making process. Decision Support Systems 44(4), pp. 983-999. [download]
- M.R.K. Mes, M.C. van der Heijden, and A. van Harten (2007). Comparison of agent-based scheduling to look-ahead heuristics for real-time transportation problems. European Journal of Operational Research 181(1), pp. 59–75. [download]

Book Chapters & Conference Proceedings:

- M.R.K. Mes, W.J.A. van Heeswijk, and F.R. Akkerman (2022). Reinforcement Learning for Data-Driven Logistics. Extended abstract for the Route 2022 workshop.
- M.R.K. Mes, E.A. Lalla, and S. Voß (2021). Editors of the book Computational Logistics, connected to the 12th International Conference on Computational Logistics. Part of the Lecture Notes in Computer Science book series, Springer, Cham. [download]
- F. Akkerman, E.A. Lalla-Ruiz, and M.R.K. Mes (2021). Cross-Docking: Current Research versus Industry Practice and Industry 4.0 Adoption. In T. Bondarouk and M. Olivas-Lujan (Eds.), Advanced Series in Management, Emerald Publishing. [download]
- E.A. Lalla, M.R.K. Mes, and S. Voß (2020). Computational Logistics – Online, ICCL2020, The Netherlands. IFORS News 15(4), pp. 34-35. [download]
- E.A. Lalla, M.R.K. Mes, and S. Voß (2020). Editors of the book Computational Logistics, connected to the 11th International Conference on Computational Logistics. Part of the Lecture Notes in Computer Science book series, Springer, Cham. [download]
- O.A.L. Eikenbroek, M.R.K. Mes, and E.C. van Berkum (2019). Online route planning in response to non-recurrent traffic disturbances. Presented at 30th European Conference on Operational Research, EURO 2019, Dublin, Ireland.
- O.A.L. Eikenbroek, M.R.K. Mes, and E.C. van Berkum (2019). Pattern Recognition in Urban Traffic Flows. Paper presented at 98th Transportation Research Board (TRB) Annual Meeting 2019, Washington, United States.
- A.E. Pérez Rivera, M.R.K. Mes and J. van Hillegersberg (2018). A Simulation Game for Anticipatory Scheduling of Synchromodal Transportation. ISAGA 2018 Conference Proceedings, Thailand.
- A.E. Pérez Rivera and M.R.K. Mes (2018). Integrated Scheduling of Drayage and Long-haul Transportation in Synchromodality. Odysseus Workshop 2018, Cagliari, Italy.
- M.R.K. Mes and B. Gerrits (2018). Multi-agent Systems. In Zijm, H., Klumpp, M., Regattieri, A.,Heragu, S. (Eds.), Operations, Logistics and Supply Chain Management. Springer Berlin Heidelberg.
- W. van Heeswijk, M.R.K. Mes and J.M.J. Schutten (2018). Transportation Management. In Zijm, H., Klumpp, M., Regattieri, A.,Heragu, S. (Eds.), Operations, Logistics and Supply Chain Management. Springer Berlin Heidelberg. [download]
- A.E. Pérez Rivera, M.R.K. Mes (2017). Integrated scheduling in synchromodal transport. LOGMS 2017 Conference Proceedings, Bergen, Norway.
- A.E. Pérez Rivera, M.R.K. Mes (2017). Scheduling synchromodal freight transport using approximate dynamic programming. VeRoLog 2017 Conference Proceedings, Amsterdam, The Netherlands.
- M.R.K. Mes (2017). Simulation Modelling using Practical Examples: A Plant Simulation Tutorial. University of Twente, Enschede, The Nether-

lands.
- M.R.K. Mes and J.M.J. Schutten (2016). Dynamische afvalinzameling; efficiënter en slimmer. STAtOR 17(3), pp. 18-21.
- A.E. Pérez Rivera, M.R.K. Mes (2016). Pre- and end-haulage operations in a multi-depot and multi-resource synchromodal network. TRISTAN 2016, Aruba.
- W. Chen, M.R.K. Mes, and J.M.J. Schutten (2016). A ride-sharing problem with meeting points and return restriction. TRISTAN 2016, Aruba.
- W. van Heeswijk, M.R.K. Mes, and M. Schutten (2016). An Agent-Based Simulation Study on the Effectiveness of Urban Consolidation Initiatives. TRISTAN 2016, Aruba.
- D.M. Yazan, L. Fraccascia, M.R.K. Mes, and W.H.M. Zijm (2016). Cooperation in manure-based biogas production networks: An agent-based modelling approach. In: ILS 2016, Information Systems, Logistics and Supply Chain Conference, 01-06-2016 - 04-06-2016, Bordeaux.
- A.E. Pérez Rivera, M.R.K. Mes (2015). Dynamic freight selection for reducing long-haul round trip costs. VeRoLog 2015, Vienna, Austria.
- W. van Heeswijk, M.R.K. Mes, and M. Schutten (2015). An ADP approach towards the delivery dispatching problem with time windows. TSL Workshop, Berlin 8-7-2015.
- D.M. Yazan, D. Cafagna, M.R.K. Mes, L. Fraccascia, P. Ponfrandolfo, and H. Zijm (2015). Economic sustainability of biogas production from animal manure: A regional circular economy model. In: Circular Economy Inspiring Sustainable Innovation, The 4th GIN symposium, Mexico City.
- M. Schutten, W. van Heeswijk, and M.R.K. Mes (2014). Consolidation planning in transportation networks with transhipments. VeRoLog 2014, Oslo, Norway.
- R. van Urk, and M.R.K. Mes (2014). Optimized Time Differentiated Parcel Delivery using Private and Public Transport. VeRoLog 2014, Oslo, Norway.
- D.M. Yazan, I. van Duren, M.R.K. Mes, S. Kersten, J. Clancy, and H. Zijm (2013). A comparative supply chain sustainability evaluation of mobile pyrolysis plants and pyrolysis-based bio-refineries. International Symposium on Biorefinery for Food, Fuel and Materials (BFF2013), Wageningen, the Netherlands, April 7-10.
- M.R.K. Mes, and R. van Urk (2012). Synchromodal Transport Planning. VeRoLog 2013, Southampton, UK.
- M.R.K. Mes (2012). Using Simulation to Assess the Opportunities of Dynamic Waste Collection. In Use Cases of Discrete Event Simulation, S. Bangsow (Eds). Springer, pp. 277-307.
- M.R.K. Mes, I.M.H. Vliegen, R. Visser (2012). A Simulation Study of an Integrated Emergency Post. ORAHS 2012 Conference Proceedings, Enschede, The Netherlands.
- M.R.K. Mes (2008). Sequential Auctions for Full Truckload Allocation. PhD thesis, University of Twente.
- M.R.K. Mes, M.C. van der Heijden, and P.C. Schuur (2009). Dynamic threshold policy for delaying and breaking commitments in transportation auctions. TRISTAN VI, Phuket Island, Thailand.
- M.R.K. Mes, M.C. van der Heijden, and P.C. Schuur (2006). Opportunity costs calculation in agent-based vehicle routing and scheduling. Odysseus Workshop 2006, Altea, Spain.

Additional publications:

- A complete overview of publications, including conference proceedings and book chapters, can be found on Archive University of Twente and Google Scholar

Grants & Research Projects

ResilientCorridorsTwin (Transitioning towards Resilient Multimodal Corridors using Digital Twinning)

TKI Dinalog & IenW

Principal Investigator — *2024 - PRESENT*

- TKI Dinalog project proposal funded by IenW. The proposal was submitted 07-04-2023 and awarded 18-09-2023.
- Supervisor of a PhD candidate in this project.

Smart4L

NWO KIK

Participant — *2024 - PRESENT*

- Supervisor of a PhD candidate in this project.

DIGITAL (MSCA Digital Finance)

EU MSCA-DN

Participant — *2024 - PRESENT*

- Call HORIZON-MSCA-2022-DN-01. Marie Sklodowska-Curie Action for an Industrial Doctoral Network. This proposal has been awarded August 2023.
- Supervisor of several PhD candidates within this project.

ECOLOGIC (Emission Control and Logistics Optimization for Green Infrastructure Construction)

TKI Dinalog & IenW

Participant — *2024 - PRESENT*

- TKI Dinalog project proposal funded by IenW. The proposal was submitted 7-4-2023 and awarded 18-09-2023.
- Supervisor of a PhD and EngD candidate in this project.

FMaaS (Freight Mobility as a Service)

NWO NWA

UT-Principal Investigator

2024 - PRESENT

- FMaas "It's a cargo match!" Attaining waste-free and effective freight transport systems by seamlessly matching demand and supply with inclusive, smart, and green-oriented booking platforms. NWA-ORC 2022 (NWA.1518.22.023).
- The proposal has been submitted for the first time on 06-10-2021 and has been awarded 18-07-2023.

DReSC (Digital Resilience in Supply Chains)

TKI Dinalog

Participant

2024 - PRESENT

- TKI Call CS4NL - Supply Chain Security.
- The proposal has been submitted for the first time on 29-06-2023 and has been awarded 22-02-2024.

SEAMLOG (Seamless logistics operations for efficient and resilient multimodal freight transport)

EU HORIZON-RIA

Co-Principal Investigator

2023

- Horizon Europe Call HORIZON-CL5-2023-D6-01.
- December 2023 we received the news that the proposal was positively evaluated but put on a reserve list.

Logiquay (Adaptive Multi-Actor Multi-Modal Closed-Loop Planning and Logistics for Renewal and Renovation of Urban Bridges and Quay Walls)

NWO NWA

Co-Principal Investigator

2022 - PRESENT

- NWA L2 - Thema 2020 - Bruggen en kademuren in stedelijk gebied – Urbiquay project. NWA.1431.20.005.
- The proposal has been awarded 03-06-2022. Supervisor of a PhD candidate (Robbert Bosch).

SAVED (Samenwerkend Autonoom Vervoer op bEDrijventerreinen)

SIA RAAK-PRO

UT-Principal Investigator

2022 - PRESENT

- Regieorgaan SIA RAAK-PRO. RAAK.PRO04.089.
- The pre-proposal has been submitted 12-01-2021 and was accepted on 09-06-2021 for the final round. The final proposal has been submitted 21-09-2021 and was accepted on 16-05-2022.

DETAIL (Development of a Digital Energy Twin for AI-based Logistics)

AiNed

Co-Principal Investigator

2022

- The proposal was submitted 04-11-2022 but received the decision on 09-12-2022 that the proposal has not been awarded.
- AiNed NLAIC WG MTL.

INGENIOUS: INtelligent charGing ENvironment for logIstics autonomOUS transport

SIA KIEM

UT-Principal Investigator

2021 - 2022

- The proposal was submitted 03-06-2021 and granted on 04-11-2021.

DynaPlex (Deep Reinforcement Learning for Data-Driven Logistics)

TKI Dinalog

UT-Principal Investigator

2021 - PRESENT

- TKI Dinalog 3e toeslag call. Funding for 3 PhD students. The proposal was submitted on 11-12-2020 and was awarded on 05-02-2021. Supervisor of a PhD candidate (Fabian Akkerman).

i-Cargo (intelligent-cooperative inter-hub logistics corridor)

NWO NWA

UT-Principal Investigator

2021

- NWA Small Projects Funding. The proposal was submitted 06-11-2020. This proposal has been awarded January 2021.

Innovative Solutions for Vaccine Logistics

TKI Dinalog

Participant

2021

- COVID-19 proposal. This proposal was not successful (January 2021).

Total Factory Control for Steel Fabrication and Plate Processing

Voortman Steel

Principal Investigator & Supervisor EngD candidate

2020 - 2024

- EngD project. Contract signed March 2020. The budget has been used to appoint an EngD candidate (Mohammad Pourmehdi).

Smart Multi-Modal Multi-Layer Urban Logistics

Chile

Co-Principal Investigator

2020 - 2024

- International project for funding a PhD candidate by the Government of Chile.
- Supervisor of the selected PhD candidate (Giovanni Campuzano) who started in April 2020.

STEERS (towardS inTelligEnt intER-hub logiStics)

SIA

UT-Principal Investigator

2020 - 2021

- Role in project acquisition: UT-PI. The proposal was submitted 29-06-2020 and accepted 30-10-2020.

ICLL (Intelligent Contactless Last-mile Logistics)

UT BMS

Principal Investigator

2020

- BMS COVID call 2nd round. The proposal was submitted 28-11-2020. This proposal was not successful.

KLM KickstartAI

KLM

Principal Investigator & Supervisor two PhD candidates

2019 - PRESENT

- Joint Academic Position offered by KLM in the context of the Kickstart AI program.
- One co-funded assistant professor position and two fully funded PhD positions. Supervisor of the two PhD candidates.

CATALYST (Connected and Automated Transport and Logistics Living Lab)

NWO

Co-Principal Investigator

2019 - PRESENT

- NWO Sustainable Living Labs. Proposal was submitted 19-02-2019 and accepted 27-06-2019.
- Full funding of PhD candidate Matteo Brunetti and partial funding of PhD candidate Berry Gerrits.

AIRLIFT (lAst mIle dRone LogIstics For humaniTarian aid)

UT+WfA

Principal investigator & Supervisor PhD candidate

2019 - 2024

- BMS Signature PhD position in collaboration with Wings for Aid.
- Modelling, optimization, and analysis of the use of Unmanned Aerial Vehicles (UAVs) for humanitarian logistics. Deliverables include methods for planning and control of UAVs as well as a generic simulation model for UAV-aided humanitarian logistics. The model contains a library of disasters and their essential attributes, allowing experimentation with, e.g., various supply chain configurations and drone operations.

SOLport (Self organising logistics in the Port)

TKI Dinalog

UT-Principal Investigator

2019 - 2022

- Proposal was submitted 17-04-2019 and accepted 15-07-2019. Research has been carried out together with PhD candidate Berry Gerrits.

VirtualLSP (Together we can make it: An online learning community of logistic service providers)

NWO

Co-Principal Investigator

2019

- NWO Human Capital: Future of Work. The proposal has been withdrawn.

CONDOR (aCcelerate the adOption of uNmanneD cargO aiRcraft)

NWO

Principal Investigator

2019

- NWO Accelerator Call 2019. Submitted a preproposal but withdrew the application due to insufficient co-finance.

DTPSM (Digital Twin Powered Smart Warehousing)

NWO

Co-Principal Investigator

2019

- Submitted a preproposal but withdrew the application due to insufficient co-finance.

SCHOOL (uSing maCHine learning algOrithms fOr Logistics operations)

NWO

Co-Principal Investigator

2019

- NWO Accelerator Call 2019. This proposal was not successful.

ANyPLACE (AutoNomous Pickup and deLivery as an Anticipatory Cooperative servicE)

NWO NWA

Co-Principal Investigator

2019

- The proposal was submitted in June 2019, and we were informed 07-10-2019 that it would not be granted.

Trucks & Barges v2 (A Serious Game for Logistics Planning Education)

Connekt

Principal Investigator

2019

- Proposal was submitted 14-02-2019 and accepted 05-03-2019.

Trucks & Barges v1 (Trucks & Barges: a logistics serious game)

TKI Dinalog

Principal Investigator

2019

- Proposal was submitted 05-02-2019 and accepted 27-05-2019.

TUAREG (Trade roUtes flAgship coopeRativE loGistics)

EU Horizon 2020

Co-Principal Investigator

2019

- Horizon 2020 program Mobility for Growth (H2020-MG-2018-2019-2020).
- The 1st round proposal was submitted 17-01-2019. Accepted in the first round. Received very positive reviews in the final round but was put on the reserve list.

DataRel (big DATA for REsilient Logistics) *NWO*

Participant & supervisor of two PhD candidates *2018 - 2023*

- NWO Big Data: Real Time ICT for Logistics research program. I am involved in the supervision of two PhD students appointed on this project.

ARIES (Assessing and Reducing fraud in manure declarations: Insights from behavioural and Earth Sciences data) *NVWA*

Participant *2018 - 2020*

- Proposal submitted 15-10-2018 and accepted a few weeks later.

SPINFUL (A Sustainable Physical Internet for Future Logistics) *4TU*

Participant *2018*

- 4TU research program 2018-2021. This proposal was not successful.

EULAT (Efficient Urban Logistics and Traffic) *NWO*

UT-Principal Investigator *2017*

- NWO Perspectief 2017-2018. Application was withdrawn after the first round due to time pressure.

ADAPTATION (ADAptive Planning wiTh Advance Traffic InformatiON) *NWO*

Co-Principal Investigator *2016 - 2022*

- NWO Call Complexity in Transport and Logistics 2016. The proposal was awarded in November 2016. Supervisor of the PhD candidate Oskar Eikenbroek.

TEUbooker (providing a water-based inter-terminal exchange route with real-time matching of demand and supply) *TKI Dinalog*

Participant *2016 - 2018*

- The proposal was submitted in June 2019 and accepted a few weeks later.

CULT (Collaborative Urban Logistics and Traffic) *NWO*

UT-Principal Investigator *2016*

- NWO Call Complexity in Transport and Logistics 2016. The proposal was not successful.

DSSGBSC (Designing sustainable second generation bioenergy supply chains: an agent-based modelling approach) *UT*

Principal Investigator *2015 - 2016*

- Wrote a UT BMS Tech4People Postdoc proposal, which was awarded in January 2015.

FoRCES (Forecast-based Resource Control for Emergency Services) *NWO*

Principal Investigator *2015*

- NWO STW Open Technology Program. The proposal was submitted in December 2015. This proposal was not successful.

Synchromodal-IT (IT Services for Synchromodality) *TKI Dinalog*

Co-Principal Investigator *2013 - 2018*

- This proposal has been awarded on November, 2013. Hired three PhD candidates on this project.
- Served as project manager (together with M.E. Iacob and prof. J. van Hillegersberg) and daily supervisor of 1 of the PhD candidates (Arturo Pérez Rivera).

CONCOORD^2 (Consolidation and Coordination in urban areas) *EU JPI*

Co-Principal Investigator *2012 - 2017*

- Joint Programming Initiative Urban Europe (JPI). This proposal has been awarded on December, 2012. Daily supervisor of a PhD candidate (Wouter van Heeswijk).

CargoHitching (Integrated people and freight synchromodal transportation networks) *TKI Dinalog*

Co-Principal Investigator *2012 - 2017*

- This proposal has been awarded on June, 2012. Daily supervisor of a PhD candidate (Rick van Urk) and a Postdoc (Wenyi Chen).

CATeLOG (Competitive Advantage Through e-Commerce Logistics) *TKI Dinalog*

Participant *2012 - 2016*

- This proposal has been awarded on 17-09-2012.

Synchromodal Control Tower *IDVV*

UT-Principal Investigator *2012 - 2013*

- Impuls Dynamisch Verkeersmanagement Vaarwegen. This proposal has been awarded on June, 2012.

ITT (Inter Terminal Transport Maasvlakte 1+2)

Port of Rotterdam

UT-Principal Investigator *2012*

- Resigned from the project due to limited funding.

BREIN

IDVV

Participant *2012*

- Participation in the tender procedure for developing the practical test "BREIN KoCoBiVa" for barge planning in the Port of Rotterdam. This proposal was not successful.

BioSCinT (Bioenergy Supply Chain Integration)

EU IEE

Participant *2012*

- Collaborative research proposal for the IEE 2012 call (Intelligent Energy Europe), number IEE-12-324821. This proposal has been submitted 08-05-2012 and we were notified 26-11-2012 that it will not be granted.

Optimale logistiek en patiënten voorkeuren in de acute zorgketen

NWO ZonMW

Participant *2011 - 2014*

- This proposal was awarded in April 2011. For a period of two years, I was assigned for 0.2-0.33 FTE to this project.

BATMAN (BArge Terminal Multi Agent Network)

IDVV

Co-Principal Investigator *2011*

- Proposal for Impuls Dynamisch Verkeersmanagement Vaarwegen (IDVV). This proposal has been awarded on November, 2011. For a period of two years, starting from November 1, 2011, I was assigned 5-8 hours per week to this project. I was responsible, in the role of work package leader, for the design of the software agents and algorithms.

CONCOORD[1] (Consolidation and Coordination in Urban Areas)

EU FP7

Participant *2011*

- Collaborative research proposal for the Seventh Framework Programme (FP7): GC.SST.2011.7-4. Urban – interurban shipments. The proposal was submitted 02-12-2010 but we were informed 07-03-2011 that this proposal has not been awarded.

Dynamic Waste Collection

Twente Milieu

Principal Investigator *2010*

- Wrote a proposal for a research and implementation project at Twente Milieu. This project has been executed in 2010. Together with BSc and MSc students, I designed a dynamic collection policy for emptying underground containers, where containers are selected based on estimated fill levels using sensor information. The resulting dynamic collection policy has been implemented at the company.

Dynamic fleet management in a competitive environment

NWO Rubicon

Principal Investigator *2009*

- Wrote a proposal for a Rubicon grant. This proposal scored excellent on all criteria, and NWO awarded a personal Rubicon grant. The grant was used for a research stay at Princeton University, USA.

MASSCO (Multi-Agent Sustainable Supply chains for Construction)

BSIK

Participant *2009*

- Project case within the BSIK program Transumo DIPLOMA (see below).
- Investigate whether decentralized coordination using multi-agent planning technology in combination with real-time information coming from sensor networks leads to more sustainable and efficient supply chains for the construction industry.

DIPLOMA (DIstributed PLanning and Optimization with Multi-Agents)

BSIK

Participant *2005 - 2008*

- Granted by the BSIK program Transumo (TRANsition SUstainable MObility).
- As part of my PhD research, I participated in this project. I did research on the use of multi-agent systems at an industrial bakery (Merba) as well as in the Port of Rotterdam.

PhD Committees

2027	**Mahekha Dahanayaka**, Aviation Ground Operations (Started 01-04-2023)	*First supervisor*
2027	**Antonio Montaruli**, Aviation Network Scheduling (started 01-03-2023)	*First supervisor*
2027	**Robbert Bosch**, Infrastructure Maintenance Planning (started 01-02-2023)	*First supervisor*
2025	**Lennart Baals**, Essays in FinTech and Digital Finance (started 01-09-2021)	*First supervisor*
2025	**Fabian Akkerman**, Deep Reinforcement Learning for Data-Driven Logistics (started 01-05-2021)	*First supervisor*
2024	**Giovanni Campuzano Arroyo**, Smart Multi-Modal Multi-Layer Urban Logistics (started 01-09-2021)	*First Supervisor*

2024	**Matteo Brunetti**, Connected Automated Transport at Smart Yards (started 01-02-2020)	*First Supervisor*
2024	**Robert van Steenbergen**, Last-mile Drone Logistics for Humanitarian Aid (started 01-12-2019	*First Supervisor*
2024	**Lotte van Hezewijk**, AI for Production and Inventory Control (defence end 2024); Eindhoven Technical University	*Committee member*
2024	**Martijn Koot**, Real-time ICT for Resilient Logistics Planning. Daily supervisor (defence 28-05-2024)	*First Supervisor*
2024	**Jens Hönen**, Local Energy Trading for Microgrids: Modeling Human Behavior, Uncertainty and Grid Constraints (defence 28-03-2024); University of Twente	*Committee member*
2023	**Sahand Asgarpour**, Supporting Cross-sectoral Infrastructure Investment Planning [download] (defence 13-11-2023); University of Twente	*Committee member*
2023	**Dissa Chandra**, Governance of Inter-organizational System based Collaboration: supply chain cases [download] (defence 13-09-2023); University of Twente	*Committee member*
2023	**Hannah Yee**, Synchromodal transport planning using real-time information; committee member for 2 doctoral seminars (23-3-2022, 8-3-2023), a predefence (19-6-2023), and the public defence (6-9-2023); KU Leuven	*Committee member*
2023	**Berry Gerrits**, Self-Organizing Logistics: Towards a Unifying Framework for Automated Transport Systems [download] (defence 03-03-2023); supervision together with Peter Schuur and Jos van Hillegersberg	*First Supervisor*
2023	**Oskar Eikenbroek**, Variations in Urban Traffic [download] (defence 17-02-2023); PhD candidate from the Faculty of Engineering Technology (ET) at the University of Twente; supervision together with Prof. Dr. Ir. Eric van Berkum	*First supervisor*
2022	**Alberto Giudici**, Cooperation, reliability, and matching in inland freight transport (defence 01-12-2022); Erasmus University	*Committee member*
2021	**Erwin Bezembinder**, Junction design rules: Improving junction design choices in urban traffic networks [download] (defence 05-11-2021); University of Twente	*Committee member*
2021	**Fan Yun**, Managing reefer logistics in cold chains Decision support in a multi-actor setting (defence 02-07-2021); Wageningen University & Research	*Committee member*
2020	**Ninja Soeffker**, Adaptive State Space Partitioning for Dynamic Vehicle Routing Problems (defence 09-07-2020); University of Braunschweig; supervision together with Prof. Dr. Dirk C. Mattfeld	*Committee member*
2019	**Vahid Yazdanpanah**, Multiagent Industrial Symbiosis Systems [download] (defence 27-11-2019); University of Twente	*Committee member*
2019	**Viet Nguyen**, Value of information in agro-food logistics management - A case of the Dutch floriculture supply chain network (defence 6-9-2019); Wageningen University & Research	*Committee member*
2018	**Nils Knofius**, Additive Manufacturing in After-Sales Service Supply Chains [download] (defence 19-12-2018); University of Twente; partly involved as supervisor	*Committee member*
2018	**Ingeborg Bikker**, Organizing Timely Treatment in Multi-Disciplinary Care [download] (defence 2-11-2018); University of Twente; partly involved as supervisor	*Committee member*
2018	**Mariska van Essen**, The Potential of Social Routing Advice [download] (defence 5-10-2018); University of Twente	*Committee member*
2018	**Arturo Pérez Rivera**, Anticipatory Freight Scheduling in Synchromodal Transport [download] (defence 29-6-2018); first supervisor Jos van Hillegersberg	*Daily supervisor*
2017	**Wouter van Heeswijk**, Consolidation and coordination in urban freight transport [download] (defence 19-5-2017); together with Marco Schutten and promotor Henk Zijm	*Daily supervisor*
2014	**Rick van Urk**, Real-time Route Planning for Cargo Hitching; together with Marco Schutten and promotor Henk Zijm; decided to stop after almost three years due to personal circumstances; hired a postdoc to continue the work (Wenyi Chen)	*Daily supervisor*
2013	**Peter Hulshof**, Integrated decision making in healthcare: an operations research and management science perspective [download] (defence 21-11-2013); partly involved as supervisor	*Committee member*

Teaching

OR Models for the premaster IEM (201500012)

Pre-MSc

I designed and am responsible for the 3EC Simulation part of the course.

2017 - PRESENT

IEM Research Orientation (201700020)

MSc

I designed and am responsible for the Supply Chain and Transportation Management orientation within this course.

2017 - PRESENT

Supervision of MSc graduation assignments

MSc

Supervised >140 MSc graduation assignments, with >80 as first supervisor and >60 as second supervisor.

2009 - PRESENT

Supervision of BSc graduation assignments

BSc

Supervised >30 BSc graduation assignments as first supervisor (and many more as second supervisor).

2009 - PRESENT

Simulation (19182021)

MSc

Responsible lecturer for this 5EC MSc course. Redesigned the course several times to keep up with recent developments.

2004 - PRESENT

Operations Research Techniques 2 (201800004)

MSc

I designed and am responsible for the "Stochastic Optimization and Learning" part of the course, where I introduce the topics of Optimal Learning, Approximate Dynamic Programming, and Reinforcement Learning.

2019 - 2022

Modelling and Analysis of Stochastic Processes for IEM (201400062)

BSc

Coordinator of this 15EC BSc module. In addition, I designed this module and contributed to roughly 41% of the teaching. More specifically, I taught the following 3 out of 5 module components: Simulation and heuristics, Project Simulation and heuristics, and Multidisciplinary project.

2015 - 2022

Various BSc modules

BSc

Tutor within several TOM modules: Module 1 – Introductie Technische Bedrijfskunde (201300023), Module 2 – Operations Management (201300024), Module 3 – Business Intelligence and IT (201300108), and Module 6 – Consumentenproducten (201400265).

2013 - 2022

Management of Technology for PLM (201100163)

MSc

I designed this course and was fully responsible for it.

2011 - 2016

Project: Processen en Procesbesturing (194121040)

BSc

I was the responsible teacher of this 5EC BSc course and taught 55% of the material.

2008 - 2013

Project Productie & Logistiek Management (194121070)

BSc

I was fully responsible for this course

2008 - 2013

Management of Technology (191800670)

MSc

I was responsible for the "Production and Logistics Management" track part of this course (50%).

2006 - 2010

Supply Chain and Transportation Management (191820190)

MSc

One of the involved teachers in this 5EC MSc course.

2004 - 2007

Warehousing (191820120)

MSc

One of the involved teachers in this 5EC MSc course.

2005 - 2006

Stochastische Modellen in Operations Management (191530881)

MSc

One of the involved teachers in this 5EC MSc course (responsible for the part on stochastic dynamic programming and Markov decision processes).

2007

Management and memberships

Management:

- Member of the Program Committee for the Simulation and AI (SAI) Track of the Winter Simulation Conference (2023).
- Chair of the Industrial Engineering and Business Information Systems (IEBIS) section. IEBIS consists of 154 staff members (48 scientific staff, 17 PhD and PDEng students, 61 external PhD and PDEng students, and 28 affiliated staff) divided over several themes (Human Resource Management, Organizational Behaviour and Change, Transportation and Logistics Management, Healthcare Logistics, Sustainable Supply Chains, Cyber Security, and Business Information Systems).
- Board member of the High-Tech Business and Entrepreneurship (HBE) department [March 2018-now].
- Board member of the HBE section Industrial Engineering and Business Information Systems (IEBIS), which includes conducting annual appraisals with IEBIS colleagues [January 2020-now].
- Board member of the Beta Research School for Operations Management and Logistics, which unites various OR/MS groups from the UT, UM, VU Amsterdam, WUR, CWI, KU Leuven, U Hasselt and TU/e [January 2021-now].

- Member of the Examination Board Management Sciences [February 2017-now, since February 2020 as vice chair].
- Member of the Program Committee for the Agent-based Simulation (ABS) Track of the Winter Simulation Conference (2018,2019,2020,2021,2022) [January 2018-now].
- Coordinator of the U-Today special issue about the High-Tech Business and Entrepreneurship (HBE) department, see [download] [2019].
- Coordinator of the hiring process regarding the 6 HBE vacancies (organizing and attending the fast majority of job interviews) [2019-2020].
- Module coordinator for the TEM module Modelling and Analysis of Stochastic Processes for IEM (201400062). This is a joint module together with Civil Engineering and Applied Mathematics, with course codes 201400147 and 201400434 [2015-now].
- Member of the design team for the new IEM bachelor program [2011-2014].
- Member of the OLC (opleidingscommissie) Technische Bedrijfskunde / Industrial Engineering & Management [2011-2017].
- MT member of the CTIT Centre for Sustainable Supply Chain Innovation (SSI) [2013-2016].
- Member of the Gebruikersadviesraad ICTS [2010-2011].

Memberships:

- INFORMS: The Institute for Operations Research and the Management Sciences. INFORMS is the largest professional society in the world for professionals in the field of operations research, management science, and business analytics. [membership page]
- INFORMS TSL: Transportation Science and Logistics Society of INFORMS. [membership page]
- INFORMS SIM: Simulation Society of INFORMS. [membership page]
- Beta: Research School for Operations Management and Logistics. Beta is recognized by the KNAW (Royal Netherlands Academy of Arts and Sciences) and constitutes of researchers from the field of Operations Management and Logistics at various Dutch and Flemish universities. [membership page]
- LNMB: Dutch Network on the Mathematics of Operations Research (Landelijk Netwerk Mathematische Besliskunde). [membership page]
- VeRoLog: The Working Group on Vehicle Routing and Logistics Optimization within EURO, the Association of the European Operational Research Societies. [membership page]
- Port of Twente: a consortium of entrepreneurs, government, and knowledge institutes that work together to strengthen the economy of the Twente region by creating more jobs in the logistics sector; providing technological innovations, synchromodal solutions, and a motivated, skilled, and growing labour market. [membership page]
- PUCA: Platform for Unmanned Cargo Aircraft. PUCA aims to facilitate the development of unmanned cargo aircraft (UCA) and to let its members play a meaningful and profitable role in this development. PUCA aims to capitalize on the strengths of its members: logistics, systems integration, sensors and development of subsystems. [no longer an active member]
- BEON: Bio-energiecluster Oost-Nederland. BEON is a cluster of companies and institutions which aims to promote bioenergy in the eastern Netherlands. The cluster aims to provide a significant contribution to strengthening the economic and international position of bioenergy parties in the eastern Netherlands with positive effects on employment. [no longer an active member]
- CHOIR: Centre for Healthcare Operations Improvement & Research. CHOIR is the knowledge centre for optimization of healthcare processes and research in the Netherlands. [no longer an active member]

Professional trainings

Well-being leadership expedition *May 10, 2022*
Academic leadership *October 30, 2017*
ECIU Masterclass on Entrepreneurial Teaching and Learning *April 4, 2014*
Supervising PhD students *December 9, 2013*
UTQ (final judgement: excellent) *June 3, 2013*

Editorial tasks

Editor:

- Editor of the Special Issue "Artificial Intelligence for Automation in Freight Transport" [download] in the Wiley journal "International Transactions in Operational Research" (ITOR).
- Editor of the Springer book Computational Logistics [download], together with E. Lalla-Ruiz and S. Voß. This book constitutes the proceedings of the 12th International Conference on Computational Logistics, ICCL 2021, held in Enschede, The Netherlands, in September 2021. The 42 papers included in this book were carefully reviewed and selected from 111 submissions. They were organized in topical sections named: maritime and port logistics; supply chain and production management; urban transport and collaborative logistics; routing, dispatching, and scheduling; air logistics and multi-modal transport.
- Editor of the Special Issue "Optimization and Artificial Intelligence in Logistics Management" in the Springer journal "Annals of Operations Research". Editor of the Springer book Computational Logistics [download], together with E. Lalla-Ruiz and S. Voß. This book constitutes the proceedings of the 11th International Conference on Computational Logistics, ICCL 2020, held in Enschede, The Netherlands, in September 2020. The 49 papers included in this book were carefully reviewed and selected from 73 submissions. They were organized in topical sections named: maritime and port logistics; vehicle routing and scheduling; freight distribution and city logistics; network design and scheduling; and selected topics in logistics.

Conference:

- Organizer of the Symposium AI for Operations Management, full day program with equal contribution from industry and academia, sponsored by TKI Dinalog and Beta, held at the Spoorwegmuseum in Utrecht, May 12, 2023.

- Organizer of the 12th International Conference on Computational Logistics (ICCL2021), held virtually at the University of Twente, September 26-29, 2021.
- Organizer of the 11th International Conference on Computational Logistics (ICCL2020), held virtually at the University of Twente, September 27-30, 2020.
- Member of the Program Committee for the Agent-based Simulation (ABS) Track of the Winter Simulation Conference (2018, 2019, 2020, 2021,2022) [January 2018-now].
- Member of the Scientific Committee of the International Workshop on Advancing Resilience in Enterprise Architecture and Decision Support Systems (AREADS) with the 32nd International Conference on Advanced Information Systems Engineering (CAiSE) [2020].

Reviewer:

- Reviewer for various journals, such as Transportation Science, Transportation Research Part B, Transportation Research Part E, Flexible Services and Manufacturing, Omega, OR Spectrum, European Journal of Operational Research, Journal of the Operational Research Society, International Journal of Production Economics, International Journal of Production Research, Journal of the Operational Research Society, Computers & Operations Research, Computers in Industry, Decision Support Systems, Waste Management, Computers, Environment and Urban Systems, The International Journal of Human Resource Management, Proceedings of the Winter Simulation Conferences, Proceedings of the ICCL conferences, Proceedings of the TRISTAN conferences, Mathematical Problems in Engineering, and Naval Research Logistics.