Lehrstuhl für BWL insb. Logistikmanagement Johannes Gutenberg-Universität Mainz Prof. Dr. Stefan Irnich Jakob-Welder-Weg 9 D-55128 Mainz Seminar in Logistikmanagement (WiSe 2022/23) M.Sc. Stefan Faldum M.Sc. Laura Korbacher M.Sc. Jeanette Schmidt Dr. Christian Tilk Prof. Dr. Stefan Irnich

Themen Seminar Logistikmanagement

• Operations Research/Management Science:

Thema 1 (Bin packing and cutting stock problems: Mathematical models and exact algorithms) Delorme et al. (2016)

Thema 2 (A New Branch-and-Price-and-Cut Algorithm for One-Dimensional Bin-Packing Problems) Wei et al. (2020)

Thema 3 (A discrete cross aisle design model for order-picking warehouses) Ömer Öztürkoglu and Hoser (2019)

Thema 4 (A General Branch-and-Cut Framework for Rotating Workforce Scheduling) Becker et al. (2022)

• Transportlogistik:

Thema 5 (Machine-learning-based arc selection for constrained shortest path problems in column generation) Morabit et al. (2022)

Thema 6 (Compact formulations for split delivery routing problems) Munari and Savelsbergh (2022)

Thema 7 (An adaptive large neighborhood search approach for multiple traveling repairman problem with profits) Avci and Avci (2019)

Thema 8 (Branch-and-price and adaptive large neighborhood search for the truck and trailer routing problem with time windows) Parragh and Cordeau (2017)

Thema 9 (A Branch-and-Price-and-Cut Algorithm for the Vehicle Routing Problem with Two-Dimensional Loading Constraints) Zhang et al. (2022)

Thema 10 (A Compact Arc-Based ILP Formulation for the Pickup and Delivery Problem with Divisible Pickups and Deliveries) Jargalsaikhan et al. (2021)

Thema 11 (An Exact Price-Cut-and-enumerate Method for the Capacitated Multitrip Vehicle Routing Problem with Time Windows) Yang (2022)

• Revenue Management:

Thema 12 (A column generation algorithm for choice-based network revenue management) Bront et al. (2009)

• Standortplanung:

Thema 13 (Median and Covering Location Problems with Interconnected Facilities) Cherkesly et al. (2019)

Thema 14 (*Revisiting the Hamiltonian p-median problem: A new formulation on directed graphs and a branch-and-cut algorithm*) Bektaş et al. (2019)

Literatur

- Mualla Gonca Avci and Mustafa Avci. An adaptive large neighborhood search approach for multiple traveling repairman problem with profits. *Computers & Operations Research*, 111:367–385, November 2019. doi: 10.1016/j.cor.2019.07.012.
- Tristan Becker, Maximilian Schiffer, and Grit Walther. A general branch-and-cut framework for rotating workforce scheduling. *INFORMS Journal on Computing*, February 2022. doi: 10.1287/ijoc.2021.1149.
- Tolga Bektaş, Luís Gouveia, and Daniel Santos. Revisiting the hamiltonian p-median problem: A new formulation on directed graphs and a branch-and-cut algorithm. *European Journal of Operational Research*, 276(1):40 – 64, 2019. doi: 10.1016/j.ejor.2018.12.041.
- Juan José Miranda Bront, Isabel Méndez-Díaz, and Gustavo Vulcano. A column generation algorithm for choice-based network revenue management. Operations Research, 57(3):769–784, 2009. doi: 10.1287/ opre.1080.0567.
- Marilène Cherkesly, Mercedes Landete, and Gilbert Laporte. Median and covering location problems with interconnected facilities. *Computers & Operations Research*, 107:1–18, July 2019. doi: 10.1016/j. cor.2019.03.002.
- Maxence Delorme, Manuel Iori, and Silvano Martello. Bin packing and cutting stock problems: Mathematical models and exact algorithms. *European Journal of Operational Research*, 255(1):1–20, November 2016. doi: 10.1016/j.ejor.2016.04.030.
- Bolor Jargalsaikhan, Ward Romeijnders, and Kees Jan Roodbergen. A compact arc-based ILP formulation for the pickup and delivery problem with divisible pickups and deliveries. *Transportation Science*, 55 (2):336–352, March 2021. doi: 10.1287/trsc.2020.1016.
- Mouad Morabit, Guy Desaulniers, and Andrea Lodi. Machine-learning-based arc selection for constrained shortest path problems in column generation. arXiv preprint arXiv:2201.02535, 2022. doi: 10.48550/arXiv.2201.02535.
- Pedro Munari and Martin Savelsbergh. Compact formulations for split delivery routing problems. Transportation Science, 56(4):1022–1043, 2022. doi: 10.1287/trsc.2021.1106.
- Sophie N. Parragh and Jean-François Cordeau. Branch-and-price and adaptive large neighborhood search for the truck and trailer routing problem with time windows. *Computers & Operations Research*, 83: 28–44, July 2017. doi: 10.1016/j.cor.2017.01.020.

- Lijun Wei, Zhixing Luo, Roberto Baldacci, and Andrew Lim. A new branch-and-price-and-cut algorithm for one-dimensional bin-packing problems. *INFORMS Journal on Computing*, 32(2):428–443, April 2020. doi: 10.1287/ijoc.2018.0867.
- Yu Yang. An exact price-cut-and-enumerate method for the capacitated multi-trip vehicle routing problem with time windows. *Transportation Science*, 2022. doi: 10.1287/trsc.2022.1161. (ahead of print).
- Xiangyi Zhang, Lu Chen, Michel Gendreau, and André Langevin. A branch-and-price-and-cut algorithm for the vehicle routing problem with two-dimensional loading constraints. *Transportation Science*, March 2022. doi: 10.1287/trsc.2022.1135.
- Ömer Öztürkoglu and Deniz Hoser. A discrete cross aisle design model for order-picking warehouses. *European Journal of Operational Research*, 275(2):411–430, 2019. doi: https://doi.org/10.1016/j.ejor. 2018.11.037.