

# Michał A. Mańkowski

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Citizenship: E.U. (Poland).  
Languages: Polish, English.

## Education

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2016 - 2020	Ph.D. in Computer Science, King Abdullah University of Science and Technology, Saudi Arabia
2014 - 2016	M.Sc. in Electrical Engineering, Warsaw University of Technology, Poland
2010 - 2014	B.Sc. in Electrical and Computer Engineering, Warsaw University of Technology, Poland

## Employment

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2020 - Present	Postdoctoral Fellow, Transplant King Abdullah University of Science and Technology, Saudi Arabia
2020 - Present	Contractor/Consultant, Epidemiology Research Group in Organ Transplantation, Johns Hopkins School of Medicine, MD, USA
2015 - 2016	IT Senior Specialist, Transplant Coordinating Center "Poltransplant", Ministry of Health, Poland

## Research Experience and Visits

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March 2020	Visiting Student, Department of Economics, Stanford University, CA, USA – postponed due to coronavirus outbreak
May - September 2019	Research visit, MIT Sloan School of Management, Massachusetts Institute of Technology, MA, USA
Summers of 2017, 2018	Research Trainee, Epidemiology Research Group in Organ Transplantation, Johns Hopkins School of Medicine, MD, USA
February - August 2015	Visiting Student, King Abdullah University of Science and Technology, Saudi Arabia
August - December 2014	Research Assistant, Gwangju Institute of Science and Technology, South Korea

## Research Interests

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Dynamic Programming, Combination Optimization, Simulations, Healthcare Operation and Analytics

## Teaching Experience

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Teaching Assistant	CS 260 Design and Analysis of Algorithms – KAUST, Spring 2018, Fall 2017, 2018, 2019
Teaching Assistant	CS 361 Combinatorial Machine Learning – KAUST, Spring 2019, 2020

## Grants

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Co-Investigator	Antibody Screening for Novel Coronavirus (SARS-CoV-2) Infection in Dialysis Facilities in the Kingdom of Saudi Arabia, 2020, (PI: Abdulrahman Housawi) – Saudi Arabia Ministry of Health Clinical Research Protocol; pilot study from June 1st to September 1st, 2020; responsible for simulation and modeling studies
Co-Principal Investigator	Optimizing the Saudi National Kidney Exchange Program, 2020, (Co-PIs: Michal Mankowski, Diogo Gomes, Joris Van de Klundert, Khalid AlMeshari) – shortlisted for funding by KAUST Smart Health Initiative, the final decision is pending; responsible for conduct, administration, study design and modeling
Graduate Student	Artificial Intelligence Powered Decision Support System for COVID-19 Screening, Diagnosis, Management, and Prognosis, 2020, (PI: Amr Jamal) – under preparation; responsible for machine learning models

## Service

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Co-Chair	The Second Healthcare Analytics and Data Science, Virtual, Saudi Arabia, 2020
Co-Chair	KAUST-MBSC Invitational Healthcare Analytics and Data Science Workshop, KAUST, Saudi Arabia, 2020
Session Chair	INFORMS Annual Meeting, Seattle, WA, USA, 2019
Session Chair	INFORMS International Meeting, Cancun, Mexico, 2019
Co-Chair	The First KAUST-MBSC Joint Workshop, KAUST, Saudi Arabia, 2019

## Published Papers

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Mankowski, M., Moshkov, M.: Extensions of dynamic programming for multi-stage combinatorial optimization. *Theoretical Computer Science* 844, 106 – 132 (2020)

Mankowski, M., Moshkov, M.: Dynamic programming bi-criteria combinatorial optimization. *Discrete Applied Mathematics* (2020). URL <https://doi.org/10.1016/j.dam.2020.04.016>

Gentry, S.E., Mankowski, M.A., Michael, T.: Maximum matchings in graphs for allocating kidney paired donation. *Operations Research for Health Care* 25 (2020)

Mankowski, M.A., Kosztowski, M., Raghavan, S., Garonzik-Wang, J.M., Axelrod, D., Segev, D.L., Gentry, S.E.: Accelerating kidney allocation: Simultaneously expiring offers. *American Journal of Transplantation* 19, 3071–3078 (2019)

Mankowski, M., Moshkov, M.: Bi-criteria optimization of matchings in trees with application to kidney exchange. In: 26th International Workshop on Concurrency, Specification and Programming, CS&P 2017, Warsaw, Poland, September 25–27, 2017 (2017). URL [http://csp2017.mimuw.edu.pl/data/uploads/papers/CSP2017\\_paper\\_1.pdf](http://csp2017.mimuw.edu.pl/data/uploads/papers/CSP2017_paper_1.pdf)

Mankowski, M., Moshkov, M.: Multi-stage optimization of matchings in trees with application to kidney exchange. In: L. Polkowski, Y. Yao, P. Artiemjew, D. Ciucci, D. Liu, D. Slezak, B. Zielosko (eds.) *Rough Sets - International Joint Conference, IJCRS 2017, Olsztyn, Poland, July 3–7, 2017, Proceedings, Part I, Lecture Notes in Computer Science*, vol. 10313, pp. 123–130. Springer (2017)

Danek, T., Protasiuk, R., Mankowski, M., Brutkiewicz, A., Trzeźniewski, R., Podlińska, I., Milecka, A., Jonas, M., Danielewicz, R., Czerwiński, J.: System of monitoring potential deceased organ donations in over 200 hospitals in poland using a web tool: Implementation and structure. *Transplantation Proceedings* 48(5), 1381 – 1386 (2016). DOI <https://doi.org/10.1016/j.transproceed.2016.01.062>. URL <http://www.sciencedirect.com/science/article/pii/S0041134516003195>

Borowik, G., Luba, T., Jankowski, C., Mankowski, M.: Decision table decomposition for further rule induction. In: 2015 Asia-Pacific Conference on Computer Aided System Engineering, Quito, Ecuador, July 14–16, 2015, pp. 102–106. IEEE (2015)

Jankowski, C., Reda, D., Mankowski, M., Borowik, G.: Discretization of data using boolean transformations and information theory based evaluation criteria. *Bulletin of the Polish Academy of Sciences: Technical Sciences* 63(No 4), 923–932 (2015). DOI [10.1515/bpasts-2015-0105](https://doi.org/10.1515/bpasts-2015-0105)

Mankowski, M., Luba, T., Jankowski, C.: Evaluation of decision table decomposition using dynamic programming classifiers. In: Z. Suraj, L. Czaja (eds.) *Proceedings of the 24th International Workshop on Concurrency, Specification and Programming, Rzeszow, Poland, September 28-30, 2015, CEUR Workshop Proceedings*, vol. 1492, pp. 34–43. CEUR-WS.org (2015). URL [http://ceur-ws.org/Vol-1492/Paper\\_28.pdf](http://ceur-ws.org/Vol-1492/Paper_28.pdf)

Michal Mankowski and Mikhail Moshkov, “Multi-stage and bi-criteria optimization for one-dimensional clustering”, Submitted to LOPAL 2020 : Second International Conference on Learning and Optimization Algorithms: Theory and Applications, Cordoba, Spain 2020

Bart Smeulders, Michal Mankowski, and Joris Van de Klundert, “European reported measures in kidney exchange programs literature”, Submitted to Nephrology Dialysis Transplantation

Juliana Bastos, Michal Mankowski, Sommer Gentry, Allan Massie, Cellen Bisi, Carlos Duarte, Vinicius Colares, Dorry Segev, and Gustavo Ferreira, “Kidney paired donation in Brazil – a single center prospective”, Paper under preparation

Michal Mankowski, Dorry Segev, Sommer Gentry, and Nikolaos Trichakis, “When one size does not fit all: Geographically heterogeneous liver distribution”, Paper under preparation

Michal Mankowski and Mikhail Moshkov, “Dynamic Programming Multi-Objective Combinatorial Optimization”, Book under preparation

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#### Conference and Workshop Presentations

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Bart Smeulders, Michal Mankowski, and Joris van de Klundert, “The kidney exchange programs performance measures”, European Network for Collaboration on Kidney Exchange Programmes Workshop, Online, 2020

Michal Mankowski, “On analytics and AI in healthcare - US organ transplantation examples”, KAUST-MBSC Invitational Healthcare Analytics and Data Science Workshop, KAUST, Saudi Arabia, 2020

Michal Mankowski, Nicholas Wood, Dorry Segev, and Sommer Gentry, “Reducing travel while improving geographic equity: continuous distribution with gravity functions”, ASTS 20th Annual State of the Art Winter Symposium, Miami, FL, USA, 2020

Sommer Gentry, Michal Mankowski, and Michael T.S., and Dorry Segev, “Maximum matchings in graphs for allocating kidney paired donation”, INFORMS Annual Meeting 2019, Seattle, WA, USA, 2019

Michal Mankowski and Mikhail Moshkov, “Syntactical circuits for combinatorial optimization in application to knapsack problem”, INFORMS Annual Meeting 2019, Seattle, WA, USA, 2019

Michal Mankowski and Sommer Gentry, “Skipping centers and simultaneous offers: evaluating novel strategies to accelerate kidney allocations”, INFORMS Healthcare, Boston, MA, USA, 2019

Michal Mankowski and Mikhail Moshkov, “Dynamic programming for bi-criteria combinatorial optimization”, 30th European Conference on Operational Research, Dublin, Ireland, 2019

Michal Mankowski and Mikhail Moshkov, “Dynamic programming for multi-stage combinatorial optimization”, INFORMS International Meeting, Cancun, Mexico, 2019

Michal Mankowski, Martin Kosztowski, Jacqueline Garonzik-Wang, David Axelrod, Dorry Segev, and Sommer Gentry, “Skipping patients and simultaneous offers: evaluating novel strategies to accelerate kidney allocation”, ASTS 19th Annual State of the Art Winter Symposium, Miami, FL, USA, 2019

Sommer Gentry and Michal Mankowski, “Soapbox presentation: speed up kidney allocation simultaneous and expiring offering scheme”, ASTS 19th Annual State of the Art Winter Symposium, Miami, FL, USA, 2019, Voted the best soapbox presentation

Michal Mankowski and Sommer Gentry, “Accelerating kidney allocation: simultaneously and expiring offers”, INFORMS Annual Meeting, Phoenix, AZ, USA, 2018

Michal Mankowski, Uchenna Akujuobi, and Vladimir Bajic, “Acronym detection and extraction task”, 2nd International Summer School on Deep Learning, Genova, Italy, 2018

Michal Mankowski and Mikhail Moshkov, “Bi-criteria optimization of matchings in trees with application to kidney exchange”, Concurrency, Specification, and Programming Workshop (CS&P 2017), Warsaw, Poland 2017

Michal Mankowski and Mikhail Moshkov, “Multi-stage optimization of matchings in trees with application to kidney exchange”, International Joint Conference on Rough Sets, Olsztyn, Poland, 2017

## Professional Memberships

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ACM	Association for Computing Machinery - Student's Chapter
ASTS	American Society of Transplant Surgeons - Trainee Member
ENCKEP	European Network for Collaboration on Kidney Exchange Programmes