

ADMISSION TO DOCTORAL STUDIES

Session September 2026

Field of doctoral studies:

Doctoral supervisor: prof. dr. eng. Dominic Mircea Kristaly

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: <i>Artificial Intelligence Methods for Decision Support</i>
Contents / Main aspects to be considered <i>Study and development of artificial intelligence methods for decision support. Methods for analysis, prediction, recommendation, and evaluation of decision alternatives will be investigated, together with mechanisms for uncertainty estimation, explanation of recommendations, and human–AI collaboration. The research will focus on the development and evaluation of adaptive methods capable of integrating heterogeneous data and adjusting the level of assistance according to the decision-making context. The proposed methods will be experimentally validated through the development of prototypes and their application to various relevant scenarios and domains.</i>
Recommended bibliography: Russell, S. J., Norvig, P. (2020). <i>Artificial Intelligence: A Modern Approach</i>, 4th Edition, Pearson. Lai, V., Chen, C., Smith-Renner, A., Liao, Q. V., Tan, C. (2023). <i>Towards a Science of Human-AI Decision Making: An Overview of Design Space in Empirical Human-Subject Studies</i>. Proceedings of ACM FAccT 2023, pp. 1369–1385. DOI: 10.1145/3593013.3594087. Vaccaro, M., Almaatouq, A., Malone, T. (2024). <i>When combinations of humans and AI are useful: A systematic review and meta-analysis</i>. Nature Human Behaviour, 8, 2293–2303. DOI: 10.1038/s41562-024-02024-1. Gomez, C., Cho, S. M., Ke, S., Huang, C.-M., Unberath, M. (2024). <i>Human-AI collaboration is not very collaborative yet: a taxonomy of interaction patterns in AI-assisted decision making from a systematic review</i>. Frontiers in Computer Science, 6, 1521066. DOI: 10.3389/fcomp.2024.1521066. Rudin, C. (2019). <i>Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead</i>. Nature Machine Intelligence, 1, 206–215. DOI: 10.1038/s42256-019-0048-x.
Prerequisites / Remarks: -
☐ Scientific Doctorate ☐ Professional Doctorate
☐ without tuition fee (state budget funded) ☐ with tuition fee or with funding from other sources than the state budget

Doctoral supervisor,

Prof. Dr. eng. Dominic Mircea Kristaly

Signature

Coordinator of the field of doctoral studies,

Prof. Dr. eng. Sorin-Aurel Moraru

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