Rickard K.A. Karlsson

karlsson.rka@gmail.com | Delft, the Netherlands |

Research Interests: Causal Inference, Machine Learning, Statistics

Education

Expected 2025 — **Ph.D. Computer Science** at Delft University of Technology, the Netherlands.
Dissertation topic: Causal Inference & Machine Learning
Advisors: Jesse H. Krijthe & Marcel Reinders

2021 — **M.Sc. Engineering Mathematics** at Chalmers University of Technology, Sweden.
Thesis: Learning using Privileged Time-Series
Advisor: Fredrik D. Johansson

2019 — **B.Sc. Engineering Physics** at Chalmers University of Technology, Sweden.
Thesis: Event reconstruction of gamma-rays using neural networks
Advisor: Andreas M. Heinz

Work Experience

01/2021–06/2021 — **Chalmers University of Technology**
Graduate Student Researcher
Studied learning algorithms for long-term predictions that utilize privileged information in the forms of time series. Supervised by Fredrik D. Johansson.

07/2020–12/2020 — **Apro Translation AB**
Software Developer
Developed software for robotic process automation (RPA).

07/2020–09/2020 — **Delft University of Technology**
Research Assistant
Worked on black-box optimization using surrogate models. Supervised by Laurens Bliek.

06/2019–08/2019 — **NASA Goddard Space Flight Center**
Data Analyst Intern
Developed data visualization software for very-long-baseline interferometry data.

01/2019–06/2019 **Chalmers University of Technology**
Undergraduate Student Researcher
Worked on using deep learning models to improve analysis of data from subatomic physics experiments. Supervised by Andreas M. Heinz.

Teaching Experience

Delft University of Technology

2022 Teaching assistant in Machine Learning 2 (MSc level)

Chalmers University of Technology

2020 Teaching assistant in Computational Methods in Bioinformatics (MSc level)

Supervisions

BSc students

2022 *Stelios Avgousti, Christof Goedhart, Hendy Liang, David van der Maas, Noyan Toksoy*
Thesis topic: Predicting Outcomes in Dota 2 using Causal Inference

2022 *Zenan Guan, Jeroen Hoefland, Jochem van Lith, Anxian Liu*
Thesis topic: Out-Of-Domain Generalization with Invariant Predictors

Publications

Conference

2022 Karlsson, R. K., Willbo, M., Hussain, Z. M., Krishnan, R. G., Sontag, D., and Johansson, F. Using time-series privileged information for provably efficient learning of prediction models. In *International Conference on Artificial Intelligence and Statistics* (2022), PMLR, pp. 5459–5484

2020 Karlsson, R., Bliek, L., Verwer, S., and Weerdt, M. d. Continuous surrogate-based optimization algorithms are well-suited for expensive discrete problems. In *Benelux Conference on Artificial Intelligence* (2020), Springer, pp. 48–63

Preprint

2022 Karlsson, R. K., and Krijthe, J. H. Combining observational datasets from multiple environments to detect hidden confounding. *arXiv preprint arXiv:2205.13935* (2022)

2021 Bliek, L., Guijt, A., Karlsson, R., Verwer, S., and de Weerdt, M. Expobench: Benchmarking surrogate-based optimisation algorithms on expensive black-box functions. *arXiv preprint arXiv:2106.04618* (2021)

Extended Abstract / Short Papers

2022 Bliek, L., Guijt, A., and Karlsson, R. Hospital simulation model optimisation with a random relu expansion surrogate model. In *Proceedings of the Genetic and Evolutionary Computation Conference Companion* (2021), pp. 13–14

Theses

2021 *Learning using Privileged Time-Series*, Chalmers University of Technology.

2019 *Event reconstruction of gamma-rays using neural networks*, Chalmers University of Technology.

Honors, Awards & Scholarships

2020 Recipient of the Royal & Hvitfeldtska Foundation scholarship for my academic performances.

2018 Awarded for best experimental work in physics among more than 110 physics students.

2017 Recipient of the Adlerbetska Foundation scholarship for my academic performances during the first year of my bachelors studies.

Schools and Workshops Attended

2022 Machine Learning Summer School (MLSS) in Krakow, Poland.

2022 Game-theoretic Statistics and Anytime-valid Inference in Eindhoven, the Netherlands.

Languages

Swedish (native), English (fluent), Polish (intermediate), Dutch (basic)

[CV last updated on August 8, 2022]