

Academic Positions

Academy of Finland Postdoctoral Researcher

Aalto University, Finland

SEP. 2022 – PRESENT

Supervisor: Dr Arno Solin

Research Topics: Probabilistic circuits, Bayesian deep learning, stochastic processes

Postdoctoral Researcher

Aalto University, Finland

NOV. 2020 – AUG. 2022

Supervisor: Dr Arno Solin

Research Topics: Bayesian deep learning, stochastic processes

Doctoral Researcher

TU Graz, Austria

MAY 2017 – JULY 2020

Supervisor: Prof. Dr Franz Pernkopf

Research Topic: Probabilistic circuits / sum-product networks

Research Assistant

University of Cambridge, UK

AUG. 2018 – SEP. 2018

Supervisors: Prof. Dr Zoubin Ghahramani & Dr Hong Ge

Research Topics: Probabilistic programming, Bayesian nonparametrics

Visiting Researcher

University of Cambridge, UK

DEC. 2017 – JAN. 2018

Hosts: Prof. Dr Zoubin Ghahramani & Dr Robert Peharz

Research Topics: Bayesian learning of probabilistic circuits

Research Assistant

Austrian Research Institute for AI (OFAI), Austria

APR. 2015 – MAY 2019

Supervisors: Prof. em Dr Robert Trapp & Dr Brigitte Kren

Research Topics: Statistical modelling, applied machine learning

Research Assistant

VRVis Research Center, Austria

JAN. 2009 – FEB. 2015

Supervisor: Dr Katja Bühler

Research Topic: Biomedical image processing, applied machine learning

Education

PhD, Machine Learning (with distinction)

Graz University of Technology, Graz, Austria

NOV. 2015 – AUG. 2020

Thesis Supervisors: Prof. Dr Franz Pernkopf, and Dr Robert Peharz

Thesis Topic: Sum-Product Networks for Complex Modelling Scenarios

Master of Science, Computational Intelligence

Vienna University of Technology, Vienna, Austria

OCT. 2009 – JAN. 2014

Thesis Supervisors: Prof. Dr Robert Sablatnig, Dr Katja Bühler

Thesis Topic: Fast and Accurate Localisation of Anatomical Landmarks on Medical Images

Bachelor of Applied Science, Software Engineering

University of Applied Sciences Technikum Wien, Vienna, Austria

OCT. 2006 – JUN. 2009

Five Selected Publications (Chronological Order)

- S. Roy, **M. Trapp**, A. Pilzer, J. Kannala, N. Sebe, E. Ricci, A. Solin. "Uncertainty-guided source-free domain adaptation." In Proceedings of the European Conference Computer Vision (ECCV), 2022.
- L. Meronen, **M. Trapp**, A. Solin. "Periodic Activation Functions Induce Stationarity." In Proceedings of the Advances in Neural Information Processing (NeurIPS), 2021.
- **M. Trapp**, R. Peharz, F. Pernkopf, C.E. Rasmussen. "Deep Structured Mixtures of Gaussian Processes." In Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.
- R. Peharz, S. Lang, A. Vergari, K. Stelzner, A. Molina, **M. Trapp**, G. Van den Broeck, K. Kersting, Z. Ghahramani. "Einsum Networks: Fast and Scalable Learning of Tractable Probabilistic Circuits." International Conference on Machine Learning (ICML), 2020.

- **M. Trapp**, R. Peharz, H. Ge, F. Pernkopf, Z. Ghahramani. "Bayesian Learning of Sum-Product Networks." Advances in Neural Information Processing Systems (NeurIPS), 2019.
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Awards & Funding

- [Academy of Finland Postdoctoral Fellowship](#), 2022. **Budget:** 230.540,00 EUR.
 - [European Commission - Seal of Excellence](#), 2022.
 - [HIIT short term project](#), 2022. **Budget:** 18.056,73 EUR.
 - [DAAD AI Networking Fellowship](#), 2020.
 - [Vienna BioCenter Scholarship](#), 2015 (I did not accept the scholarship).
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Professional Service

Outreach:

- Organiser of ELLIS online seminar on [Advances in Probabilistic Machine Learning](#) (APML)
- Co-organiser of 1st and 2nd Workshop on Uncertainty Quantification for Computer Vision (ECCV 2022 / ICCV 2023)
- Co-organiser of 5th and 6th Workshop on Tractable Probabilistic Modelling (UAI 2022 / UAI 2023)
- Co-organiser of the Nordic Probabilistic AI School (ProbAI 2022)
- Co-organiser of the Tractable Probabilistic Inference Meeting (NeurIPS 2019)

Reviewing Activities:

NeurIPS • ICML • AISTATS • UAI • CVPR • IJCAI • IEEE TPAMI • JMLR • Bayesian Analysis

(Co)-Supervision

PhD Students:

- Lassi Meronen, Aalto University (finishing)
- Zhongjie Yu, TU Darmstadt (finishing)
- Ella Tamir, Aalto University
- Rui Liu, Aalto University

Master Thesis:

- Aleksanteri Sladek, Aalto University (2023, finishing)
 - Philipp Gabler, Graz University of Technology (2020)
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Invited Talks

- 2023: OFAI Lecture Series (virtual)
 - 2020: [Workshop on Tractable Probabilistic Modeling](#) • German Aerospace Center (DLR) • University of Tübingen • Czech Technical University
 - 2017: University of Cambridge
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Ongoing Collaborations

Dr Trevor Campbell (UBC, Canada) • Prof. Kristian Kersting (TU Darmstadt, Germany) • Prof. Li Ma (Duke, USA) • Dr Martin Andraud (Aalto University, Finland) • Dr Antonio Vergari (University of Edinburgh, UK)

Languages

English – native proficiency, **German** – native speaker

References

Ass. Prof. Dr Arno Solin
Aalto University, Finland
Postdoc Supervisor

Ass. Prof. Dr Robert Peharz
TU Graz, Austria
PhD Advisor

Prof. Kristian Kersting
TU Darmstadt, Germany
PhD Examiner & Collaborator