

## Academic Positions

### Academy of Finland Postdoctoral Researcher

Aalto University, Finland

SEP. 2022 – PRESENT

Supervisor: Dr Arno Solin

Research Topics: Probabilistic circuits, Bayesian deep learning

### 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 Trappl & 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)

- L. Meronen, **M. Trapp**, A. Solin. "Periodic Activation Functions Induce Stationarity." In Proceedings of 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.
  - **M. Trapp**, T. Madl, R. Peharz, F. Pernkopf, R. Trappl. "Safe Semi-Supervised Learning of Sum-Product Networks." Conference on Uncertainty in Artificial Intelligence (UAI), 2017.
- 

## Awards & Funding

- [HIIT short term project](#), 2022. Funded budget: 18.056, 73 EUR.
  - [Academy of Finland Postdoctoral Fellowship](#), 2022. Funded budget: 230.540, 00 EUR.
  - [DAAD AI Networking Fellowship](#), 2020.
  - International Communication Funding Award, Austrian Research Association, 2017.
  - Travel Award, International Society for Bayesian Analysis, 2017.
  - [Vienna BioCenter Scholarship](#), 2015 (I did not accept the scholarship).
- 

## Professional Service

**Supervised Master's thesis:** Aleksanteri Sladek (2023, ongoing) • Philipp Gabler (2020)

**Supervised Interns:** Alexander Matakos (2022) • Marshal Sinaga (2022) • Hanxiao Chen (2021) • Aastha Shah (2021)

**Organising Committee:** Workshop on Uncertainty Quantification for Computer Vision (ECCV 2022) • Workshop on Tractable Probabilistic Modeling (UAI 2022) • Nordic Probabilistic AI School (ProbAI 2022) • Tractable Probabilistic Inference Meeting (NeurIPS 2019)

**Reviewing:** NeurIPS/NIPS • ICML • AISTATS • UAI • CVPR • IJCAI • IEEE TPAMI • JMLR • Bayesian Analysis

---

## Invited Talks

- OFAI 2023 Lecture Series, (virtual), 2023.
  - [Workshop on Tractable Probabilistic Modeling](#), 2020.
  - German Aerospace Center (DLR), Germany, 2020.
  - University of Tübingen, Germany, 2020.
  - Czech Technical University, Czech Republic, 2020.
  - University of Cambridge, UK, 2017.
- 

## Active Collaborations

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

---

## Languages

English – native proficiency, German – native speaker

---

## References

**Ass. Prof. Dr Arno Solin**  
Aalto University, Finland  
Postdoc Supervisor  
✉ [arno.solin@aalto.fi](mailto:arno.solin@aalto.fi)

**Ass. Prof. Dr Robert Peharz**  
TU Graz, Austria  
PhD Advisor  
✉ [robert.pehartz@tugraz.at](mailto:robert.pehartz@tugraz.at)

**Prof. Kristian Kersting**  
TU Darmstadt, Germany  
PhD Examiner & Collaborator  
✉ [kersting@cs.tu-darmstadt.de](mailto:kersting@cs.tu-darmstadt.de)

**Prof. Dr Franz Pernkopf**  
TU Graz, Austria  
PhD Supervisor  
✉ [pernkopf@tugraz.at](mailto:pernkopf@tugraz.at)

**Dr Brigitte Krenn**  
OF AI, Austria  
Supervisor  
✉ [brigitte.krenn@ofai.at](mailto:brigitte.krenn@ofai.at)