

Martin Trapp

POSTDOCTORAL RESEARCHER · AALTO UNIVERSITY, FINLAND

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EDUCATION

TU Graz

PH.D., COMPUTER SCIENCE (SUMMA CUM LAUDE)

In my PhD thesis on *Sum-Product Networks for Complex Modelling Scenarios* I developed techniques for parameter and structure learning of sum-product networks, a popular family of tractable probabilistic models, and worked on posterior inference in Gaussian process models.

Graz, Austria

Nov. 2015 – Aug. 2020

TU Vienna

MASTER OF SCIENCE, COMPUTATIONAL INTELLIGENCE (COMPUTER SCIENCE)

Thesis: *Fast and Accurate Automatic Localization of Anatomical Landmarks on Medical Images*

Vienna, Austria

Oct. 2009 – Jan. 2014

University of Applied Sciences Technikum Wien

BACHELOR OF APPLIED SCIENCE, SOFTWARE ENGINEERING

Vienna, Austria

Oct. 2006 – Jun. 2009

PROFESSIONAL EXPERIENCE

Aalto University

RESEARCH COUNCIL OF FINLAND POSTDOCTORAL RESEARCHER

POSTDOCTORAL RESEARCHER

My research focuses on the development of **trustworthy** machine-learning methods with a particular emphasis on **uncertainty quantification & representation, incorporating prior knowledge**, and developing techniques that are **computationally efficient**. I work(ed) on various topics including research in Bayesian deep learning, tractable probabilistic models (probabilistic circuits), and efficient techniques for Bayesian inference in large-scale systems.

Espoo, Finland

Sep. 2022 - today

Nov. 2020 – Aug. 2022

University of British Columbia

VISITING RESEARCHER

During my visit to Vancouver, I worked with Prof. Trevor Campbell and Prof. Alexandre Bouchard-Côté. I currently collaborate with both on topics related to Bayesian inference (parallel tempering) and Bayesian nonparametric models for variational inference.

Vancouver, Canada

Okt. 2023 – Dec. 2023

University of Cambridge

RESEARCH ASSISTANT

VISITING RESEARCHER

During my stay at Cambridge, I worked together with Dr. Hong Ge and Prof. Zoubin Ghahramani on the probabilistic programming language Turing.jl and research on probabilistic circuits.

Cambridge, UK

Aug. 2018 – Sep. 2018

Dec. 2017 – Jan. 2018

Austrian Research Institute for AI (OFAI)

RESEARCH ASSISTANT (PART-TIME)

I worked part-time on various projects related to data mining and natural language processing.

Vienna, Austria

Apr. 2015 – May 2019

VRVis Research Center

RESEARCH ASSISTANT (PART-TIME)

As a member of the biomedical image informatics group, I worked on the development of image-processing tools for microbiologists at the Vienna BioCenter.

Vienna, Austria

Jan. 2009 – Feb. 2015

AWARDS

Postdoctoral Fellowship, Research Council of Finland, (Budget: 230.540,00 EUR)

2022

Seal of Excellence, European Commission

2022

Short-term Project, Helsinki Institute for Information Technology, (Budget: 18.056,73 EUR)

2022

AI Networking Fellowship, Deutscher Akademischer Austauschdienst

2020

HELSINKI, 24.03.2024

MARTIN TRAPP · CURRICULUM VITAE

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International Communication Award, Austrian Research Association	2017
Travel Award, International Society for Bayesian Analysis	2017
Scholarship, Vienna BioCenter (declined the scholarship)	2015

ACADEMIC SERVICE

Organisation of Workshops and Public Seminars

WORKSHOP ON UNCERTAINTY QUANTIFICATION FOR COMPUTER VISION	(ECCV 2022, ICCV 2023, ECCV 2024)
WORKSHOP ON TRACTABLE PROBABILISTIC MODELLING	(UAI 2022, UAI 2023, UAI 2024)
ELLIS SEMINAR ON PROBABILISTIC MACHINE LEARNING	(since 2021)

Selected Reviewing Activities

NEURIPS, ICML, AISTATS, UAI, CVPR, IJCAI, IEEE TPAMI, JMLR, BAYESIAN ANALYSIS

SUPERVISION EXPERIENCE

Co-supervised Ph.D. Students

LASSI MERONEN (AALTO UNIVERSITY, 2023), ZHONGJIE YU (TU DARMSTADT, EXPECTED 2024), ELLA TAMIR (AALTO UNIVERSITY, EXPECTED 2025), RUI LIU (AALTO UNIVERSITY, EXPECTED 2026), LINGYUN YAO (AALTO UNIVERSITY, EXPECTED 2025)

Supervised Master's Students

ALEKSANTERI SLADEK (AALTO UNIVERSITY, 2023), PHILIPP GABLER (TU GRAZ, 2020)

INVITED TALKS & OUTREACH

Invited Talks

HELMHOLTZ MÜNCHEN (2024), UBC (2023), UNIVERSITY OF TÜBINGEN (2021), GERMAN AEROSPACE CENTER (2021), CZECH TECHNICAL UNIVERSITY (2020), UNIVERSITY OF CAMBRIDGE (2017), 4TH WORKSHOP ON TRACTABLE PROBABILISTIC MODELLING (2021)

Outreach Activities

LEARNING BAYESIAN STATISTICS PODCAST (2020), VIENNA DEEP LEARNING MEETUP (2024)

SKILLS

Research Interests

RELIABLE MACHINE LEARNING, PROBABILISTIC REASONING, DEEP LEARNING, BAYESIAN NONPARAMETRICS, TRACTABILITY, GPU COMPUTING

Programming Experience

PYTHON, PYTORCH, JULIA, MATLAB, C/C++, JAVA, SLURM

Language

GERMAN (NATIVE), ENGLISH (FLUENT), FRENCH (BASICS)

COLLABORATIONS

Previous Collaborations

ZOUBIN GHAHRAMANI (UNIVERSITY OF CAMBRIDGE), HONG GE (UNIVERSITY OF CAMBRIDGE), TOMAS PEVNÝ (CZECH TECHNICAL UNIVERSITY), ANTONIO VERGARI (UNIVERSITY OF EDINBURGH)

Ongoing Collaborations

TREVOR CAMPBELL (UNIVERSITY OF BRITISH COLUMBIA), GUY VAN DEN BROECK (UCLA), KRISTIAN KERSTING (TU DARMSTADT), MARTIN ANDRAUD (UCLouvain)

REFERENCES

Ass. Prof. Dr. Arno Solin Aalto University, Finland arno.solin@aalto.fi HELSINKI, 24.03.2024	Ass. Prof. Dr. Robert Peharz TU Graz, Austria robert.peharz@tugraz.at MARTIN TRAPP · CURRICULUM VITAE	Prof. Dr. Kristian Kersting TU Darmstadt, Germany kersting@cs.tu-darmstadt.de
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