

Bálint Mucsányi

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Machine Learning master's student at the University of Tübingen.
Excited about Trustworthy Machine Learning, Probabilistic Machine Learning, and Computer Vision.

Education

MSc in Machine Learning

UNIVERSITY OF TÜBINGEN

10/2021 - Exp. 01/2024

- **Grade:** 1.0/1.0, top 1% of class (ABD)
- **Thesis:** Demystifying the Hidden Role of Model Bias in Uncertainty Quantification (ongoing)

BSc in Computer Science

ELTE EÖTVÖS LORÁND UNIVERSITY

09/2018 - 07/2021

- **Grade:** Outstanding (1.0/1.0, top 1% of class)
- **Thesis:** Efficient Example-Based Program Synthesis on a Tree-Structured Grammar
- Graduated with the **Best Thesis** and **Outstanding Student of the Faculty** awards

Honors & Awards

08/2023	2nd Place , Reinforcement Learning Tournament, Autonomous Learning Group	University of Tübingen
01/2023	1st Place , Self-Driving Cars Challenge, <i>Modular Pipeline</i> , Autonomous Vision Group	University of Tübingen
12/2022	1st Place , Self-Driving Cars Challenge, <i>Reinforcement Learning</i> , Autonomous Vision Group	University of Tübingen
10/2022	1st Place , Self-Driving Cars Challenge, <i>Imitation Learning</i> , Autonomous Vision Group	University of Tübingen
04/2022	DAAD Scholarship , German Academic Exchange Service	University of Tübingen
04/2022	Deutschlandstipendium , Federal Ministry of Education	University of Tübingen
01/2022	1st Place , Deep Learning Competition, Denoising Autoencoders, Cognitive Systems Group	University of Tübingen
07/2021	Outstanding Student of the Faculty Award , Faculty of Informatics	ELTE
07/2021	Best Thesis Award , Faculty of Informatics	ELTE
03/2021	2nd Place , National Conference of Scientific Students' Associations	ELTE
12/2020	1st Place , Conference of Scientific Students' Associations	ELTE
08/2020	National Higher Education Scholarship , Ministry of Innovation and Technology	ELTE
2019	7th place , Ericsson Programming Championship, National Finals	Ericsson Hungary

Projects & Internships

Student Researcher in the STAI Group

Tübingen

UNIVERSITY OF TÜBINGEN

03/2023 - Present

- **Topic:** Uncertainty Disentanglement in Deep Neural Networks, Benchmarks for uncertainty-aware representation learning
- My ongoing master's thesis is supervised by Michael Kirchhof and Seong Joon Oh

Intern at the Mackelab

Tübingen

UNIVERSITY OF TÜBINGEN

10/2022 - 01/2023

- **Topic:** Active Learning for Amortized Bayesian Inference
- Worked on methods for active learning using simulation-based inference
- Proposed a new sequential neural posterior estimation (SNPE) method

Mentee in the Amazon Mentorship Program

Online/Munich

MENTOR: FABIO MADGE

04/2022 - Present

- Bi-weekly discussions about career opportunities and projects

Term Project: Analyzing Influential Factors of a Successful Movie

Tübingen

UNIVERSITY OF TÜBINGEN, DATA LITERACY COURSE

12/2021 - 02/2022

- Analyzed what are the most predictive factors of a successful movie using machine learning methods
- Investigated the effect of the Covid pandemic on the income of the film industry using statistical testing

Member of the John von Neumann Talent Development Student Group

ELTE

Budapest
02/2020 - 07/2021

- The group discusses advanced materials and provides additional research opportunities
- Applications to the group are judged on the basis of academic and scientific results

Student Researcher in the Machine Learning for Software Engineering Group

ELTE

Budapest
03/2019 - 04/2022

- **Topic:** Example-based neural program synthesis
- During my membership, I was also fortunate to receive a Research Scholarship

Publications

Trustworthy Machine Learning

arXiv 2023

Bálint Mucsányi, Michael Kirchhof, Elisa Nguyen, Alexander Rubinstein, Seong Joon Oh

- **Book website:** Trustworthy Machine Learning Book

URL: A Representation Learning Benchmark for Transferable Uncertainty Estimates

NeurIPS 2023

Michael Kirchhof, Bálint Mucsányi, Seong Joon Oh, Enkelejda Kasneci

- Also presented at the UAI Epistemic AI Workshop 2023 where we received the **Best Student Paper Award**

Flexible Example-Based Program Synthesis on Tree-Structured Function Compositions

SNCS 2022

Bálint Mucsányi, Bálint Gyarmathy, Ádám Czapp, Balázs Pintér

- Culmination of my bachelor's thesis

Flexcoder: Practical Program Synthesis with Flexible Input Lengths and Expressive Lambda Functions

ICPRAM 2021

Bálint Gyarmathy, Bálint Mucsányi, Ádám Czapp, Dávid Szilágyi, Balázs Pintér

- **Best Student Paper Award Finalist**

Flexcoder: Gyakorlati programszintézis flexibilis inputhosszokkal és kifejező lambdafüggvényekkel

TDK/OTDK 2021;
in Hungarian

Bálint Mucsányi, Bálint Gyarmathy, Ádám Czapp

- **2nd Place** at the National Conference of Scientific Students' Associations
- **1st Place** at the (Regional) Conference of Scientific Students' Associations

Work Experience

Teaching Assistant

Tübingen

UNIVERSITY OF TÜBINGEN

10/2022 - Present

- 10/2022 - 04/2023: Teaching Assistant for the Mathematics of Machine Learning graduate course
- 10/2023 - Present: Teaching Assistant for the Trustworthy Machine Learning graduate course

Developer Intern

Budapest

ANDCODE

07/2021 - 10/2021

- Worked on automatic news extraction and collection with advanced web crawling methods using Scrapy

Teaching Assistant

Budapest

ELTE EÖTVÖS LORÁND UNIVERSITY

02/2020 - 07/2021

- Teaching Assistant for the Object-Oriented Programming and Event-Driven Programming undergraduate courses (both English and Hungarian)

Qualifications

Programming

Python, Java, C/C++, C#, Haskell, R

Libraries

PyTorch, Tensorflow, NumPy, Pandas, Scrapy

Software

TeX, Microsoft Office Suite, Inkscape, TikZ, Git (GitHub, GitLab, BitBucket), SVN

Languages

Hungarian (native), English (C2), German (B1)