Korbinian Koch (he/him)

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Nationality: German | GitHub 🔗 | Linkedin 🔗

Education

Oct. 2020 – present	**M. Sc.** Intelligent Adaptive Systems, University of Hamburg, preliminary grade 1.19 (95 %)

7 % acceptance rate, anticipated graduation in January 2024

> **Master's thesis:** *Partial Model Merging*
> Model fusion allows for merging multiple models into a more efficient child model by interpolating the weights. However, learned features often don't match perfectly and can thus not be averaged well. I explore the merging of models just in parts and adapt a method for mitigating the occuring variance collapse. Supported with a GCP compute grant from Google through ML Collective 🔗 .

Sep. 2021 – Apr. 2022	Exchange Student, University of Toronto, GPA 4.0

Relevant courses: Trustworthy Machine Learning, Machine Learning for Healthcare, Natural Language Computing

Oct. 2016 – Sep. 2020	**B. Sc.** Human-Computer Interaction, University of Hamburg, grade 1.3 (92 %)

Awarded best degree in cohort

Thesis (1.0 / 100 %) on the estimation of voice likability using pre-trained speech embeddings, implemented in Python and Bash using sci-kit-learn, Keras/Tensorflow, and wandb

Mar. 2019	Leaders in Entrepreneurship, Louisiana State University

Entrepreneurship exchange program by the German-American Fulbright Commission

Sep. 2018 – Dec. 2018	Exchange Student, University of Calgary, GPA 3.9

Best grade in class in courses *Artificial Intelligence* and *Thinking with Data*

Publications

No Matter How You Slice It: Machine Unlearning with SISA Comes at the Expense of Minority Classes

Korbinian Koch, Marcus Soll

IEEE SaTML 2023, Paper 🔗

Professional experience

Jan. 2022 – Apr. 2022	Applied Machine Learning Intern, Vector Institute, Toronto, part-time

- ‣ Developed a customizable reranking framework for Reddit threads, increasing the diversity of viewpoints shown to users using community- and LLM-based scores
- ‣ Built a user study interface using GCP and Streamlit for the evaluation of said scores
- ‣ Wrote a Slack notification tool that tracks the status of long-running experiments on own initiative
- ‣ Ensured participant success as a technical facilitator in Vectors forecasting boot camp, a 3-day workshop introducing participants to state-of-the-art ML forecasting techniques
- ‣ Improved the documentation of NeuralProphet, an open-source forecasting framework

Nov. 2019 – Apr. 2020	Cloud Native Development Intern, MOIA, Hamburg, part-time

- ‣ Developed microservices in Kotlin using REST, GraphQL, and a variety of AWS services such as Lambda, RDS, and SQS
- ‣ Optimized data quality and query performance on PostgreSQL database
- ‣ Convinced management to allow students and interns to take part in team self-selection

Teaching experience

Oct. 2017 – Mar. 2018   *Software Development*, Teaching Assistant, University of Hamburg

Supervised classes of ~ 30 students, giving feedback on and grading assignments

Selected projects

2021   <u>Modergator</u> 🔗

Automating content moderation for text, speech, and memes in Telegram chat groups using multimodal ML models, proof of concept, group project

2021   <u>Dreaming in Goal-Conditioned Environments</u> 🔗

Extended the reinforcement learning agent Dreamer for additional robotic environments

2020   <u>A Friendly Introduction to Text Clustering</u> 🔗

Medium article with > 100K views, featured by the *Towards Data Science* editors

Leadership positions

Oct. 2017 – present   Stiftung der Deutschen Wirtschaft (sdw), Scholarship

‣ Awarded for outstanding academic potential and determination, extended in 2020
‣ Head of the local scholarship group from 2019 to 2020 with responsibility for ~60 members, organizing meetups and company visits, interviewing candidates, and onboarding new fellows

Jul. 2022 – Dec. 2022   Hugging Face Student Ambassador

Organizing student events in close coordination with the people at Hugging Face

Oct. 2020 & Oct. 2022   International Welcome Week Tutor, University of Hamburg

Onboarding international Master's students from over 20 countries over a whole week

Jul. 2017 – Sep. 2021   Student Representative, University of Hamburg

Student delegate in CS ethics commission, ML appointments committee, and examination board

Jul. 2017 – Sep. 2019   Treasurer, University of Hamburg Computer Science Student Council

Awards

Jan. 2022   IT-Talents Big Data Predictions Code Competition, Germany, 1st place, solo participation
<u>Interview (German)</u> 🔗, <u>Code</u> 🔗

Nov. 2020   Google Developer Student Club Munich CTF, Germany, 15th out of 76, team of two

Dec. 2019   API-Hackathon@PwC Frankfurt, Germany, 2nd place, team of six

Mar. 2019   StartUp Weekend Baton Rouge, USA, 1st place, team of eight, solo pitch done by me

Nov. 2018   Haskayne Sustainable Analytics Case Competition, Canada, 1st place, team of four

Technical skills

Coursework   Statistics, Trustworthy Machine Learning, Neural Networks, Robotics, Knowledge Processing, Machine Learning for Medicine

Computing   Python, PyTorch, Linux, Data Science and Visualization Tooling (Numpy, Pandas, Scikit-Learn, Seaborn, Matplotlib, etc.), SQL, GCP, AWS, Weights&Biases, Docker