Robin M. Schmidt

+49 (176) 23348219
robin.schmidt.97@web.de
Robin M. Schmidt
linkedin.com/in/schmidt-robin
github.com/SirRob1997
robinschmidt.netlify.com

Research and Work Experience

Max Planck Institute for Informatics & University of Tübingen *Aug 2020 – Present*
Master Thesis in the Explainable Machine Learning Group of Prof. Dr. Zeynep Akata [Python]

- Thesis Topic: Explainable Domain Generalization
- Developed Self-Challenging Activation Maps for Domain Generalization
- Supervised by Dr. Massimiliano Mancini, Prof. Dr. Zeynep Akata, and Prof. Dr. Philipp Hennig

Max Planck Institute for Intelligent Systems & University of Tübingen *Oct 2019 – May 2020*
Research Internship in the Methods of Machine Learning Group of Prof. Dr. Philipp Hennig [Python]

- Benchmarked and compared state-of-the-art Deep Learning optimizers and configurations
- Solved the problem of missing reference points for new optimization algorithms
- Enabled DeepOBS as a competitive benchmarking suite by creating new optimization baselines
- Took the initiative and advanced development of DeepOBS by fixing very impactful bugs
- ➥ Featured in Andrew Ng's "The Batch", grade for credit (german): **1.0** – best possible grade

IBM Research & Development *Aug 2019 – Oct 2019*
Extreme Blue Internship supervised by Martin Oberhofer and Dr. Manfred Oevers [Python]

- Led a team of interns on research for master data management with internet of things use cases
- Developed more effective instance-level product master data representations through a RESTful API
- Developed a graph-based visualization based on React.js for a prototype in the healthcare sector
- Worked closely with offering management in the U.S. to deploy the new features
- Presented the results during internal and external events, conferences, or exhibitions

Cooperative State University Baden-Württemberg Stuttgart *Oct 2017 – Jun 2018*
Research Internship supervised by Prof. Dr.-Ing. Olaf Herden [Shell]

- Compared state-of-the-art NewSQL databases on the categories of the business readiness rating
- Provided heuristics for the appropriate NewSQL database selection

Eisenmann SE *Oct 2015 – Oct 2018*
Research & Development Engineer (Co-op) + Bachelor Thesis [Java]

- Quantified and implemented more effective key performance indicators for better performance insights
- Conceptualized and developed a highly cost-efficient single product tracking system
- Took the initiative to solve data collection problems on-premise in the USA regarding the available sensor data
- Published three papers on these topics under a non-disclosure agreement – see bibliography

Education

University of Tübingen | *M.Sc. – Computer Science* *Oct 2018 – Present*
Focus on Machine Learning – Current German grade: *1.38* Grading scale from 1.0 (excellent) to 6.0 (fail)

DHBW Stuttgart | *B.Sc. – Computer Science* *Oct 2015 – Oct 2018*
Undergraduate education – German grade: *2.0* Grading scale from 1.0 (excellent) to 6.0 (fail)

Skills

Languages: German (native), English (business fluent), Latin (small latinum certificate), Japanese (beginner)
Programming: Python, Java, C#, Prolog, Matlab, R, SQL, Gremlin, HTML5, CSS3, JavaScript
Frameworks & Tools: PyTorch, TensorFlow, Flask, Pandas, Git, Linux, Docker, Kubernetes, LaTeX
Databases: MySQL, Oracle, JanusGraph, MongoDB, VoltDB, NuoDB, CockroachDB

Selected Projects & Contributions

DeepOBS: Optimization Benchmarking Suite – Contributed Baselines, Scripts and improved Software Quality

DomainBed: Domain Generalization Benchmarking Suite – Contributed Algorithms and other features

Recommender Systems 🖹: Analyzed *recourse* and *availability* under model uncertainty, discrepancy, and ambiguity

Invited Talks & Keynotes

KTH Royal Institute of Technology: Stockholm, Sweden *25.09.2020*

Unpublished & Industry Research

[Sch18a] **Robin M. Schmidt**. *Conception and Implementation of a Single Product Tracking System within a press hardening production line*. B.Sc. Thesis. (Title translated from German, subject to a NDA). 2018.

[Sch18b] **Robin M. Schmidt**. *Improvements for the configurable Data Analysis Pipeline within a Manufacturing Execution System*. (Title translated from German, subject to a NDA). 2018.

[Sch18c] **Robin M. Schmidt**. *New SQL Databases: An empirical evaluation of Open Source NewSQL databases regarding modern application scenarios*. (Title translated from German). 2018.

[Sch17] **Robin M. Schmidt**. *Calculation and Evaluation of Key Performance Indicators for production within a Manufacturing Execution System*. (Title translated from German, subject to a NDA). 2017.

Preprints

[SH20] **Robin M. Schmidt** and Moritz Hahn. *Collaborative Filtering under Model Uncertainty*. 2020. arXiv: 2008.10117 [cs.LG].

[Sch19] **Robin M. Schmidt**. *Recurrent Neural Networks (RNNs): A gentle Introduction and Overview*. 2019. arXiv: 1912.05911 [cs.LG].

Publications

[SSH21] **Robin M. Schmidt**, Frank Schneider, and Philipp Hennig. "Descending through a Crowded Valley - Benchmarking Deep Learning Optimizers". In: *9th International Conference on Learning Representations, ICLR*. (under review). 2021.

Other Interests

Street Photography: Samples of my side work – Selling metal, paper, or canvas prints of my street photography art