

# Robin M. Schmidt

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## RESEARCH AND WORK EXPERIENCE

**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, Shell,  $\LaTeX$ ]

- Benchmarked and compared 102 state-of-the-art Deep Learning optimizer choices 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
- 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, REST, Gremlin]

- Researched possibilities 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
- Took the initiative to work closely with offering management in the USA to deploy the obtained improvements
- Presented the results at a conference for worldwide stakeholders and IBM-leaders in Cluj-Napoca, Romania

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

- Compared state-of-the-art NewSQL databases on the categories of the Business Readiness Rating
- Provided heuristics for the appropriate NewSQL database selection
- Grade for Credit (german): **1.5**, approximately equivalent to an “A” grade (UK)

**Eisenmann SE** Oct 2015 – Oct 2018  
Research & Development Engineer + Bachelor Thesis [Java, JS, HTML, CSS,  $\LaTeX$ ]

- Research & Development projects in the field of Manufacturing Execution Systems
- Conceptualized and developed a highly cost-efficient single product tracking system
- Took the initiative to solve arising problems on-premise in the USA regarding the data collection
- Quantified and implemented more effective Key Performance Indicators for better performance insights
- Published several papers on these topics under a non-disclosure agreement

## EDUCATION

**University of Tübingen** | *M.Sc. – Computer Science* Oct 2018 – Present  
Focus on Machine Learning – German grade: *1.5* strong first class honours equivalent (UK)

**DHBW Stuttgart** | *B.Sc. – Computer Science* Oct 2015 – Oct 2018  
Undergraduate education – German grade: *2.0* strong upper second class honours equivalent (UK)

## 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:** Flask, React, TensorFlow, NumPy, Pandas, Version Control, Adobe Suite, Linux, Docker, Kubernetes, Microsoft Office,  $\LaTeX$   
**Databases:** MySQL, Oracle, JanusGraph, MongoDB, VoltDB, NuoDB, CockroachDB

## SELECTED PROJECTS & CONTRIBUTIONS

**DeepOBS:** Optimization Benchmarking Suite – Contributed Baselines, Scripts and improved Software Quality  
**App2Night:** Location based mobile App to create, comment and rate user generated events to find the best event  
**SiteScrawler:** Webapp to provide users with relevant news articles based on customisable topics of interest

## UNPUBLISHED & INDUSTRY RESEARCH

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- [1] 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.
- [2] 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.
- [3] Robin M. Schmidt. *Improvements for the configurable Data Analysis Pipeline within a Manufacturing Execution System*. (Title translated from German, subject to a NDA). 2018.
- [4] Robin M. Schmidt. *New SQL Databases: An empirical evaluation of Open Source NewSQL Databases regarding modern Application Scenarios*. <https://bit.ly/2OY6IGC>. (Title translated from German). 2018.

## ARXIV SUBMISSIONS

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

## PUBLICATIONS

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- [6] Robin M. Schmidt, Frank Schneider, and Philipp Hennig. “Descending through a Crowded Valley — Benchmarking Deep Learning Optimizers”. In: *Advances in Neural Information Processing Systems (NIPS)*. (under review). 2020.