Simon Heilig

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Education

since Apr. 2022	**M. Sc. Data Science** Friedrich-Alexander University Erlangen-Nürnberg Specialization: Machine Learning, Artificial Intelligence Minor: Stochastics Current Grade: 1.5
Oct. 2017 - Mar. 2021	**B. Eng. Computer Science** UAS Würzburg-Schweinfurt Thesis: "Analysis and Revision of the MEKA Matrix Approximation Approach" Advisors: Prof. Dr. Frank-Michael Schleif, M. Sc. Maximilian Münch Final Grade: 1.1

Professional Experience

Since Oct. 2022	**Student Teaching Assistant** Friedrich-Alexander University Erlangen-Nürnberg Stochastic modeling at the Chair for Stochastics (Prof. Krüger)
May 2021 - Nov. 2021	**Research Assistant** UAS Würzburg-Schweinfurt Full-time research assistant at the Computational Intelligence working group (Prof. Schleif); Supported by: ESF (WiT-HuB 4/2014-2020), project KI-trifft-KMU
Dec. 2019 - Sep 2022	**Student Teaching and Research Assistant** UAS Würzburg-Schweinfurt Assisting the Computational Intelligence working group (Prof. Schleif) in the field of indefinite learning; Developing a SMO based QP solver for general constraints in Python; Teaching assistant for applied numerics
Dec. 2018 - Feb. 2020	**Student Backend Developer** Plunet GmbH Part-time working student and full-time intern (six months) as a Java backend developer in an agile Scrum team; Developed new features with Spring and Hibernate; Responsible for data imports and their automation with Java

Publications

Heilig, Simon, Maximilian Münch, and Frank-Michael Schleif. Memory efficient kernel approximation for non-stationary and indefinite kernels. In *International Joint Conference on Neural Networks, IJCNN 22, Padova, Italy*, 2022.

Maximilian Münch, **Heilig, Simon**, and Frank-Michael Schleif. Multi-perspective embedding for non-metric time series classification. In *29th European Symposium on Artificial Neural Networks, ESANN 2021, Bruges, Belgium*, 2021a.

Maximilian Münch, **Heilig, Simon**, Philipp Väth, and Frank-Michael Schleif. Scalable embedding of multiple perspectives for indefinite life-science data analysis. In *IEEE Symposium Series on Computational Intelligence, IEEE SSCI 2021, Orlando, Florida, USA*, 2021b.

Computer Skills

Languages:	Python, Matlab, Java, C++
Libraries:	Scikit-learn, Pandas, Numpy, Keras, PyTorch, Spring, JUnit, OpenGL, Boost
DevOps:	Anaconda, Git, Maven, Gradle

Languages

English:	GER B2
German:	Native Language

Awards and Scholarships

2022	Hans-Wilhelm Renkhoff Award for outstanding bachelor thesis
2019	Max Weber-Program Scholarship of the Federal State of Bavaria
2018	Scholarship of the Federal Government of Germany

Projects

Mar. 2020 - Sep. 2020	**Machine Learning in Pulmonary Function Diagnostics** Analyzed a medical data set of chronic obstructive pulmonary disease (COPD) patients in a team of four students; Developed explainable machine learning models with Python and Scikit-learn to distinguish between a patient suffering from the first stage of COPD and a healthy patient
Apr. 2020 - Jul. 2020	**Approximate Reinforcement Learning** Worked intensively with "Reinforcement Learning: An Introduction" [Sutton, Barto 2018] and trained an agent to play Mau Mau on his own
Aug. 2019	**Chat and Event Planning App** Creating an Android and iOS App for chatting and planning events with a friend; Together with Ionic and Cordova for building the app, we used Firebase as a cloud based authentication and database system
Mar. 2019 - Jul. 2019	**Learning Management System** Developed a full stack application in a team of six students; The key idea was to display an online course divided in lections as a dependency graph; Used a Java based wildfly backend server and an Angular frontend; The REST-API was designed after maturity level 3

Interests and Activities

Major:	Probabilistic Modeling, Kernel Machines, Reinforcement Learning, Computer Graphics
Volunteering:	Youth Leader, Youth Representative and Chairman of Youth Committee