
Haoyu Ren

Business Address: SIEMENS AG, Otto-Hahn-Ring 6, 81739 Munich, Germany

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E-Mail: haoyu.ren@siemens.com

Gender: Male

Birthday/-place: 16-Aug-1994 / Sichuan

Nationality: Chinese

Education

Technical University of Munich, Munich, Germany; Oct 2020 – Present

Doctor of Philosophy – *PhD, Informatics*

Thesis Topic: Smart Things in Industrial Internet of Things

Research Focus: Internet of Things, Tiny Machine Learning, Complex Event Processing, Knowledge Graph, Edge Computing, Semantic Web Technologies

Technical University of Munich, Munich, Germany; Oct 2017 – Mar 2020

Master of Science, *Electrical Engineering and Information Technology*

Specialization: Automation and Control

Thesis Topic: Identification of Driving Scenarios in Real Measurement Data

Catholic University of Leuven, Leuven, Belgium; Sep 2018 – Feb 2019

Exchange Student

Chongqing University, Chongqing, P.R. China; Sep 2013 – Jun 2017

Bachelor of Engineering, *Electrical Engineering and Automation*

National Chung Cheng University, Chiayi, Taiwan, China; Sep 2014 – Jan 2015

Exchange Student

Work Experience

PhD Student, Siemens AG, Oct 2020 – Present

Munich, Germany

Pursuing research and working on industrial projects in the group of connectivity and edge

Master Thesis Student, Audi AG, Sep 2019 – Mar 2020

Ingolstadt, Germany

Conducted research in the project team SAVe, developed a method to identify driving scenarios in real measurement data, and completed the master thesis

Intern, Continental ADAS GmbH, Mar 2019 – Jul 2019

Neu-Ulm, Germany

Developed a database and a visualization tool to support the team of sensor network in evaluating the sensor performance in real measurement data

Student Assistant, Technical University of Munich, Mar 2018 – Sep 2018

Munich, Germany

Assisted with first level IT tasks and resolved issues for staff and students in the central university IT-support team

Publications

[1] Francesco Montanari, **Haoyu Ren**, and Anatoli Djanatliev. 2021. Scenario detection in unlabeled real driving data with a rule-based state machine supported by a recurrent neural network. In Proceedings of IEEE 93rd Veh. Technol. Conf. (VTC-Spring), 1–5. <https://doi.org/10.1109/VTC2021-Spring51267.2021.9449032>

[2] **Haoyu Ren**, Darko Anicic, and Thomas A. Runkler. 2021. TinyOL: TinyML with Online-Learning on Microcontrollers. In 2021 International Joint Conference on Neural Networks (IJCNN). IEEE, Shenzhen, China, 1–8. <https://doi.org/10.1109/ijcnn52387.2021.9533927>

[3] **Haoyu Ren**, Darko Anicic, and Thomas A. Runkler. 2021. The Synergy of Complex Event Processing and Tiny Machine Learning in Industrial IoT. In Proceedings of the 15th ACM International Conference on Distributed and Event-Based Systems (Virtual Event, Italy) (DEBS '21). ACM, New York, USA, 126–135. <https://doi.org/10.1145/3465480.3466928>

[4] **Haoyu Ren**, Darko Anicic, and Thomas A. Runkler. 2022. Towards Semantic Management of On-Device Applications in Industrial IoT. ACM Trans. Internet Technol. 1, 1 (Jan 2022), 30. <https://doi.org/10.1145/3510820> Just Accepted.

[5] **Haoyu Ren**, Darko Anicic, and Thomas A. Runkler. 2022. How to Manage Tiny Machine Learning at Scale: An Industrial Perspective. arXiv preprint arXiv:2202.09113. <https://doi.org/10.48550/arXiv.2202.09113> Accepted by the 2022 tinyML Research Symposium

[6] **Haoyu Ren**, Kirill Dorofeev, Darko Anicic, Youssef Hammad, Roland Eckl, and Thomas A. Runkler. 2022. SeLoC-ML: Semantic Low-Code Engineering for Machine Learning Applications in Industrial IoT. arXiv preprint arXiv:2207.08818. <https://doi.org/10.48550/arxiv.2207.08818> Accepted by the 21st International Semantic Web Conference (ISWC2022)

Language: Chinese - mother tongue; English – fluent; German – fluent

Programming Skills: Advanced Knowledge of MATLAB, Java, Python, TensorFlow, SQL, C, C++, Git, Assembly Language, SPARQL. Basic Knowledge of SABER, Code Composer Studio (DSP), STEP7-Micro (PLC), PCA, SVN, LabVIEW, XML

Awards: Best Poster Award at Siemens RIE Munich Conference 2022

Engagement: Member of Siemens PhD Network (SPN); Member of The University Sports Center Munich (ZHS)