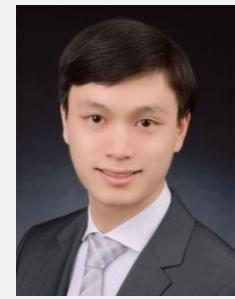


Yuncong Yu

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Germany
Birth: 29.05.1992 in Zhejiang, China



Work Experience

- 01.2020 – today **iav IAV GmbH Ingenieurgesellschaft Auto und Verkehr, Gifhorn**
Data Scientist | Department of Data Science & AI Projects
 - Pattern and motif search, anomaly detection in data from various projects
 - Analysis of battery aging effects with Bayesian inference
 - Prototyping in various projects (e.g., SaaS measurement data platform, requirements analysis tool) with React, Django/FastAPI, and MySQL
- 03.2019 – 12.2019 **TLK-Thermo GmbH, Brunswick/Ingolstadt**
Development Engineer
 - (Co-)Simulation, optimization, and control of full cell models with MATLAB/Simulink and Modelica/Dymola
 - Data analysis and process automation with Python
- 07.2018 – 12.2018 **AUDI AG, Ingolstadt**
Master Thesis | Department of Thermal Management for Fully Electric Vehicles
 - Data-driven multivariate time series analysis with Python and TensorFlow
 - Validation and integration for thermal management with MATLAB/Simulink
- 10.2017 – 03.2018 Internship | Department of Engine Flow and Aerodynamics Simulation
 - Optimization and validation of an automotive climatization model
 - 1D-Co-simulation with MATLAB/Simulink, Dymola/Modelica and TISC
 - 3D-CFD simulation with OpenFOAM, ANSA and CATIA

Education

- 12.2020 – 01.2025 **Utrecht University, Utrecht, the Netherlands**
Computer Science (Dr.)
 - Research direction: time series analysis and visual analytics
 - Doctoral Thesis: Multivariate Time Series Pattern Search
- 09.2015 – 12.2018 **KIT Karlsruhe Institute of Technology (KIT), Karlsruhe**
Mechanical Engineering (M.Sc.)
 - Major fields: mechatronics and Simulation
 - Final grade: 1.4
 - Master thesis: Segmentation, Comparison, and Interpretation of Multivariate Time Series (grade: 1.0)
- 09.2011 – 06.2015 **Sichuan University (SCU), Chengdu, China**
Mechanical Engineering (B.Eng.)
 - Final grade: 92/100 (Top 1 of 358 Students)
 - Bachelor thesis: Design and Finite Element Analysis of a Synthetic Human Organ Injection Mold (The first price of excellent bachelor thesis)
 - National Scholarship x2, excellent graduate student at the university

Practical Experiences

05.2017 – 07.2017

Karlsruhe Institute of Technology (KIT), Karlsruhe

Cognitive Automobile Lab | Institute of Measurement and Control Technology (MRT)

- Autonomous driving in a team of 6 students
- Perception, longitudinal and lateral control with C++ and Python in ROS

10.2016 – 03.2017

Scientific Assistant | Institute of Technical Mechanics (ITM)

- Tutor for computer-aided simulation with MATLAB/Simulink
- Numerics, NVH, CFD, FEM and DoE

06.2013 – 06.2014

SCU, Faculty of Mechanical Engineering, Chengdu, China

Project | National College Competition of Mechanical Innovation Design

- Team leader of 4 students
- National second price and provincial the first price

Publications

Y. Yu, T. Becker, P. Schichtel, W. Aigner, A. Telea, Michael Behrisch (2025), NOOPS: Nonmyopic Feedback-Driven Pattern Search in Multivariate Time Series. <http://dx.doi.org/10.2139/ssrn.5180352>

Y. Yu, T. Becker, W. Aigner, A. Telea, and M. Behrisch (2025) Time Series Representation Techniques: a Survey. <http://dx.doi.org/10.2139/ssrn.5180323>

Y. Yu, T. Becker, L. M. Trinh, M. Behrisch (2023): SAXRegEx: Multivariate Time Series Pattern Search With Symbolic Representation, Regular Expression, and Query Expansion. In Computers & Graphics 112, pp. 13–21. DOI: 10.1016/j.cag.2023.03.002. (**Best Paper in EuroVA 2022**)

Y. Yu; D. Kruijff; J. Jiao; T. Becker; M. Behrisch (2022): PSEUDO: Interactive Pattern Search in Multivariate Time Series with Locality-Sensitive Hashing and Relevance Feedback. In IEEE Transactions on Visualization and Computer Graphics 29 (1), pp. 33–42. DOI: 10.1109/TVCG.2022.3209431. (**Best Paper in VDS 2022**)

Y. Yu, T. Mayer, E. Knoch, M. Frey, F. Gauterin (2019): Segmentation of Multivariate Time Series with Convolutional Neural Networks. In : Proceedings of the International Conference on Calibration-Methods and Automotive Data Analytics.

Y. Yu, T. Mayer, E. Knoch, M. Frey, F. Gauterin (2019): Time Series Comparison with Dynamic Time Warping, Convolutional Neural Network and Regression. In : Proceedings of the International Conference on Calibration-Methods and Automotive Data Analytics.

Language Skills

German fluent (TestDaF: 18/20)

English fluent (TOEFL: 100/120, GRE: 322/340 3.5/6, CET-6: 602/720)

Chinese first language

Computer Skills

Data Science: Python, TensorFlow, PyTorch

WebDev: JavaScript/TypeScript, React, Django, MySQL, D3

DevOps: Git/GitLab, Docker, CI/CD-Pipeline, Jira, Confluence

Simulation: MATLAB/Simulink, Dymola/Modelica, ANSYS

Others: C/C++, ROS, CATIA, Pro/E, AutoCAD

Others

Driving licence in China (Class C1) and Germany (Class B)

Prototype driving licence (Class C)