Dr. rer. nat. Scarlet Stadtler

PERSONAL DETAILS

Name:	Scarlet Stadtler
Academic degree:	Dr. rer. nat.
Nationality:	German

WORK EXPERIENCE

02.2020 – 09.2023	Forschungszentrum Jülich, Jülich Supercomputing Centre "Earth System Data Exploration" Group Postdoc position • Principal Investigator AI-Strategy for Earth System Data • Atmospheric Representation Learning (AtmoRep) • Explainable Machine Learning for Air Quality • PhD Supervisor (Self-Supervised Learning)
06.2023 – 07.2023	The University of Tokyo, Research Centre for the Early Universe Theoretical Astrophysics Group Guest scientist • Separating entangled Line Intensity Mapping Signals using a conditional Generative Adversarial Network (cGAN) • Explainable Machine Learning for understanding if the cGAN follows physics • Improving the cGAN to be robust against measurement uncertainty
05.2022 – 07.2022	German Aerospace Centre, Institute for Software Technology Scalable Machine Learning Group Guest scientist • Exploring the usage of sparsity for Physics Informed Neural Networks (Physics Inspired AI Project) • Using Explainable Machine Learning to debug their Lambert Solver (Backbone Catalogue of Relational Debris Information)
03.2022 – 04.2022	University of Bonn, Institute of Finance and Statistics Statistics Group Guest scientist • Statistical Decision-making under Uncertainty • Problem formulation as Markov-Chain to use Robust Decision-Making

01.2022 – 02.2022	University of Bonn, Institute of Geodesy and Geoinformation Remote Sensing Group Guest scientist • Uncertainty Quantification for Deep Learning models • Identification of the overlap between Deep Learning and Decision-Making
07.2019 – 12.2019	Fujitsu Laboratories ICT Systems Laboratory Advanced Computer Systems Project • Exploration of applicability of approximate computing on the discretizied advection in the WRF weather forecasting meteorological model • Topological data analysis of the state space of WRF variables in order to feed in Betti sequences into a one dimensional convolutional neural network • Quantum Computing fundamentals
06.2018 – 09.2018	Forschungszentrum Jülich, Jülich Supercomputing Centre Division Federated Systems and Data Postdoc position • Application of deep machine learning algorithms on meteorological re-analysis data for exascale computing
06.2015 – 05.2018	Forschungszentrum Jülich Institute for Energy and Climate Troposphere and Rheinische Friedrich-Wilhelms-University, Bonn PhD position in Meteorology, Thesis title: Isoprene secondary organic aerosol formation in a global aerosol chemistry climate model

SCHOLARSHIPS

06.2023 – 08.2023	JSPS Summer Program for a research stay at the University of Tokyo
05.2022 – 07.2022	Helmholtz Information & Data Science Academy Scholarship for a research stay at the German Aerospace Centre
10.2018 – 12.2019	German Academic Exchange Service DAAD Language and Practical Experience in Japan Scholarship Holder

EDUCATION

10.2013 – 05.2015	Master of Science Physics of Earth and Atmosphere, Rheinische Friedrich-Wilhelms-University, Bonn Thesis title: Heterogeneous N_2O_5 chemistry in a global aerosol chemistry climate model
10.2010 – 07.2013	Bachelor of Science Meteorology Rheinische Friedrich-Wilhelms-University, Bonn Thesis title: Climatological assessment of the Year 2003 with respect to air pollution and the comparison of observations with EURAD simulations in NRW

COMPUTATION SKILLS

Coding Languages	Fortran (extensive knowledge) Python (extensive knowledge)
ML Frameworks	Pytorch (good knowledge) Sklearn (good knowledge) Tensorflow (basic knowledge)
Compute Systems	JUWELS, JUWELS Booster JURECA, JUROPA

LANGUAGES

German	CEF Level C2
English	CEF Level C1
Spanish	CEF Level B2
Japanese	JLPT N2