Xia CHEN

+49 15780959659
xia.chen@iek.uni-hannover.de

Research associate

Data Scientist with academic research & industry experience in developing data algorithm solutions.

Proficient in predictive modeling, data-based value proposition, advanced Machine Learning in Human-Computer Interaction, uncertainty analysis, and causal inference.

Work & Research Experience

2020/07 – Current *(Anticipated graduation: 01.2024)*

Researcher Ph.D. Candidate in Technische Universität Berlin / Leibniz Universität Hannover, Germany

- DFG project (German Research Foundation) FOR 2363: Research in data-driven / informed machine learning framework for decision-making aids, uncertainty analysis, and reasoning.
- Lecturer in courses: "Artificial Intelligence for Architecture" and “Data Sciences for Energy-Efficient Design” at the Institute of Digital Architecture, Technical University Berlin

10/2017 – 12/2019

Research Assistant in FCN institute of E.ON Energy Research Center, Aachen, Germany

- Energy time-series data analysis & research (forecasting, clustering)
- Application development of virtual energy system laboratory project.
- Full-stack development, *Juniorprofessur für Energieressourcen- und Innovationsökonomik* (JERI)

11/2016 - Current

Co-founder of Start-up Joinergy (Jiaonengwang), Shanghai, PR China

- Data solution & consulting in the energy digitalization domain
- Build predictive algorithms by the input of multiple sensor data for equipment failure and abnormal detection.
- Design the data structure for the energy digitalization foundation, deploy scenario-oriented machine learning models for supporting dynamic optimization in energy generation and efficient consumption.
- With foundation: Technology Entrepreneurship Foundation for Graduates (EFG), Shanghai, 2019; Talent Start-up Leadership Program, Suzhou, 2019; Tongji Eagles Foundation, Business Incubator of Tongji University science park, Tongji University, 2019

Social Commitment

08/2020 - Current

CINB (Association of Chinese Engineers for Sustainable Construction e.V.)
Executive Committee Member

06/2016 - Current

CEED (Association Chinese Engineers for Renewable Energy in Germany e.V.)
Executive Committee Member

Education

10/2015 - 12/2018

RWTH Aachen University, Aachen, Germany
Master of Science in Sustainable energy supply technology

09/2014 - 09/2015

Beuth Hochschule für Technik Berlin, Berlin, Germany
Bachelor of Engineering in building engineering technology

09/2011 - 09/2015

Tongji University, Shanghai, PR China
Bachelor of Engineering in building facility intelligence, *Faculty of Chinese-German University of Applied Sciences (CDHAW)*

Achievements & Technical Competency

02/2021 Top 5% in M5 (Makridakis Competitions) competition

07/2021 Finalist of Siemens “Hello Future” innovation challenge 2021, Digitally-enabled applications for smart districts

Publications

2022

- *Chen, X., Abualdenien, J., Singh, M.M., Borrmann, A. and Geyer, P., 2022. Introducing causal inference in the energy-efficient building design process. arXiv preprint arXiv:2203.10115.*

- *Chen, X. and Geyer, P., 2022. Machine assistance in energy-efficient building design: A predictive framework toward dynamic interaction with human decision-making under uncertainty. Applied Energy, 307, p.118240.*

- *Chen, X., Guo, T., Kriegel, M. and Geyer, P., 2022. A hybrid-model forecasting framework for reducing the building energy performance gap. Advanced Engineering Informatics, 52, p.101627.*

- *Xia Chen; Xiaoye Cai; Alexander Kümpel; Dirk Müller; Philipp Geyer. (2022). Dynamic Feedforward Strategy Development for Building Heating System based on AI Forecasting and Simulation, accepted by Passive and Low Energy Architecture, PLEA 2022.*

- *Chen X., Saluz U., Staudt J., Margesin M., Lang W., Geyer P. (2022). Integrated data-driven and knowledge-based performance evaluation for machine assistance in building design decision support, accepted by 29th International Workshop on Intelligent Computing in Engineering, EG-ICE 2022. Aarhus, Denmark. 2022.*

- *陈夏，张怡卓，蔡晓烨. 欧盟-德国建筑碳中和前沿［J］. 暖通空调，２０２２，５２（３）：２５-３８.*

  Chen X., Zhang Y.,Cai X. Frontiers of carbon neutrality in EU-German building sector, Heating Ventilating & Air Conditioning, TU-023; X322.

2021

- *Chen, X., Guo, T. and Geyer, P., 2021. A hybrid-model forecasting framework for reducing the building energy performance gap. In 28th International Workshop on Intelligent Computing in Engineering, EG-ICE 2021. Berlin, 2021, special issue on Advanced Engineering Informatics.*

- *Chen, X., Singh, M.M. and Geyer, P., 2021 Component-based machine learning for predicting representative time-series of energy performance in building design. In 28th International Workshop on Intelligent Computing in Engineering, EG-ICE 2021. Berlin, Germany. 2021.*

- *Geyer, P., Singh, M.M. and Chen, X., 2021. Explainable AI for engineering design: A unified approach of systems engineering and component-based deep learning. arXiv preprint arXiv:2108.13836.*

- *Xia Chen, Lars Nolting, Jan Priesmann. "FAST- model: An automated protocol for univariate time series Forecasting Algorithm SelecTion" , To be submitted paper*

Berlin, July 08. 2022