

Xia CHEN

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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

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| 2020/07 – Current (Anticipated graduation: 01.2024) | Researcher Ph.D. Candidate in Technische Universität Berlin / Leibniz Universität Hannover, Germany <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Energy time-series data analysis & research (forecasting, clustering)• Application development of virtual energy system laboratory project.• Full-stack development, <i>Juniorprofessur für Energieressourcen- und Innovationsökonomik</i> (JERI) |
| 11/2016 - Current | Co-founder of Start-up Joinergy (Jiaonengwang), Shanghai, PR China <ul style="list-style-type: none">• 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

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| 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

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|-------------------|--|
| 10/2015 - 12/2018 | RWTH Aachen University, Aachen, Germany <i>Master of Science in Sustainable energy supply technology</i> |
| 09/2014 - 09/2015 | Beuth Hochschule für Technik Berlin, Berlin, Germany <i>Bachelor of Engineering in building engineering technology</i> |
| 09/2011 - 09/2015 | Tongji University, Shanghai, PR China <i>Bachelor of Engineering in building facility intelligence, Faculty of Chinese-German University of Applied Sciences (CDHAW)</i> |

Achievements & Technical Competency

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| 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.
- Chen X., Cai X; Kümpel A.; Müller D.; Geyer P.. (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