

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 Lab. |
| 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).• Economic analysis of german energy transition innovation projects.• Full-stack development of virtual energy system laboratory project and <i>Juniorprofessur für Energieressourcen- und Innovationsökonomik</i> (JERI) |
| 11/2016 - Current | Co-founder of Joinergy Co. Ltd. (Jiaonengwang), Shanghai, PR China <ul style="list-style-type: none">• Data solution & consulting in the energy digitalization domain.• 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> |

Technical Competency

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| 02/2021 | Top 5% in M5 (Makridakis Competitions) competition, Kaggle |
| 07/2021 | Finalist of Siemens "Hello Future" innovation challenge 2021, Digitally-enabled applications for smart districts, Berlin, Germany |

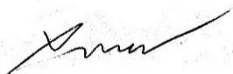
Publications

2022

- Chen, X., and Geyer, P., 2022. Sustainability recommendation system for building design alternatives under multi-objective scenarios, To be submitted paper
 - Chen, X., and Geyer, P., 2022. Pathway toward prior knowledge-integrated machine learning in engineering design, To be submitted paper
 - Chen, X., Singh, M.M. and Geyer, P., 2022. Utilizing domain knowledge: robust machine learning for building energy performance prediction with small, inconsistent datasets, Under review
 - Chen, X., Teng, X., Chenc, H., Pan, Y. and Geyer, P., 2022. Toward reliable signals decoding for electroencephalogram: A benchmark study to EEGNeX. arXiv preprint arXiv:2207.12369.
 - 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, Oct. 08. 2022