

# Yang DENG (Marco)

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## PROFESSIONAL EXPERIENCE

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- Hong Kong RTH-ITF-funded Postdoc Fellow**, PolyU, Hong Kong Nov 2024 - Present  
Advisor: Prof. Dan Wang (HKUST-AIS) and Prof. Chen Jason Zhang (PolyU-COMP)
- Visiting Researcher**, The University of Osaka, Japan Jul-Aug 2025 & May-Jun 2026  
Collaborator: Prof. Onoye Takao (Vice President) and Prof. Taniguchi Ittetsu
- Machine Learning Engineer**, DADA Group Ltd, Huawei Wireless, etc. Jun 2017 - Apr 2020

## ACADEMIC QUALIFICATIONS

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- The Hong Kong Polytechnic University** Sep 2020 - Sep 2024  
Ph.D. in Computer Science, Advisor: Prof. Dan Wang, (ACM Distinguished Scientist, 2023)
- Tongji University** Sep 2014 - Jun 2017  
M.Eng. in Software Engineering
- Nanjing University of Aeronautics and Astronautics** Sep 2010 - Jun 2014  
B.S. in Software Engineering

## PUBLICATIONS

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// 1. Conference and journal paper, ACM e-Energy and ACM BuildSys belong to ACM SIGEnergy. (\*: corresponding author, #: co-first authors)

- [**ACM e-Energy 2026**] Rui Liang, **Yang Deng\***, Yaohui Liu, et al. “ThermoStill: Distilling Time Series Foundation Model into Thermal Dynamics Model for HVAC Model Predictive Control”
- [**ACM WWW 2026**] Xiaoyang Zhang, **Yang Deng**, Fang He, and Dan Wang. “Fairer AI Carbon Accounting: Incorporating Market-based Attribution and Uncertainty in Embodied and Operational Carbon Footprint”,
- [**ACM e-Energy 2026**] Kaiyuan Zhai, Jiacheng Cui, Zhehao Zhang, Junyu Xue, **Yang Deng**, Kui Wu, and Guoming Tang. “CaberNet: Causal Representation Learning for Cross-Domain HVAC Energy Prediction”,
- [**ACM BuildSys 2025**] Dafang Zhao, **Yang Deng**, Toshihiro Suzuki, Ittetsu Taniguchi, and Takao Onoye. “HVAC Aggregation for Multi-priority Demand Flexibility: Lessons learn on On-site Experiments”
- [**NIPS 2025**] Xiaoyang Zhang, He Fang, **Yang Deng**, and Dan Wang. “Unveiling the Uncertainty in Embodied and Operational Carbon of Large AI Models through a Probabilistic Carbon Accounting Model”
- [**Knowledge-Based Systems**] Fang He, Jiaqi Fan, **Yang Deng\***, Xiaoyang Zhang, and Dan Wang. “MetaCloze: A Schema-guided Automated Building Metadata Model Generation System via Information Extraction”
- [**Knowledge-Based Systems**] Fang He, Jiaqi Fan, **Yang Deng\***, and Ka Tai Lauo. “Smart Metering Data Enhancement in Sustainable Buildings via Knowledge graph-guided Graph Neural Networks”.
- [**IJCAI 2025**] Fang He, Jiaqi Fan, **Yang Deng**, and Dan Wang. “Weather Foundation Model enhanced Decentralized Photovoltaic Power Forecasting through Spatio-temporal Knowledge Distillation”.
- [**ACM Transactions on Sensor Networks (TOSN)**] **Yang Deng**, Rui Liang, Jiaqi Fan, Yaohui Liu, Xiaoyang Zhang, Fang He, Ao Li, Dan Wang, and Dafang Zhao. “Concept Drift-aware Time-Series Generation for Online Building Load Forecasting: An Automated Data Augmentation Paradigm”.
- [**ACM BuildSys 2024**] Yufei Zhang, **Yang Deng**, Rui Liang, Dan Wang, and Andrew Sonta. “A Data-driven Framework for Occupant-centric Demand Flexibility Potential Evaluation at Scale”,
- [**ACM BuildSys 2024**] **Yang Deng**, Rui Liang, Jiaqi Fan, and Dan Wang. “AugPlug: An Automated Data Augmentation Model to Enhance Online Building Load Forecasting”, *Best Paper Candidate*
- [**ACM BuildSys 2023**] **Yang Deng**, Rui Liang, Dan Wang, Ao Li, and Fu Xiao. “Decomposition-based Data Augmentation for Time-series Building Load Data”,
- [**Applied Energy**] Li Ao, Chong Zhang, Fu Xiao, Cheng Fan, and **Yang Deng**. “Large-scale comparison and demonstration of continual learning for adaptive data-driven building energy prediction”, Applied Energy 347 (2023)

14. [ACM e-Energy 2022] **Yang Deng**, Jiaqi Fan, Hao Jiang, Fang He, Dan Wang, Ao Li, and Fu Xiao. “Behavior testing of load forecasting models using BuildChecks”,
15. [ACM e-Energy 2021] He Fang, **Yang Deng**, Yanhui Xu, Cheng Xu, Dezhi Hong, and Dan Wang. “Energon: A Data Acquisition System for Portable Building Analytics”,

// 2. Demos, posters, workshop papers, and patents. (\*: corresponding author, #: co-first authors)

1. [ICML 2025, CO-BUILD] Rui Liang, **Yang Deng**#, Donghua Xie, and Dan Wang. “Enabling Time-series Foundation Model for Building Energy Forecasting via Contrastive Curriculum Learning”, *oral presentation*
2. [ACM BuildSys 2024, Demo] **Yang Deng**, Donghua Xie, Rui Liang, and Dan Wang. “BuildProg: Program Generation for Testing ML-based Building Load Forecasting models via LLM and Prompt Engineering”,
3. [ACM BuildSys 2024, Poster] **Yang Deng**, Yaohui Liu, Rui Liang, Dafang Zhao, Ittetsu Taniguchi, Samson Tai, and Dan Wang. “Towards ML-based Model Predictive Control for HVAC Control in Multi-Context Buildings at Scale via Ensemble Learning”,
4. [ACM e-Energy 2024 Demo] **Yang Deng**, Donghua Xie, Jingyun Zeng, Rui Liang, Yufei Zhang, Jiaqi Fan, Samson Tai, and Dan Wang. “Towards deploying ML-based Load Forecasting Models for Building HVAC System: an AI Evaluation Platform”, *PRSC 2024 Best Presentation Award*
5. [ACM e-Energy 2024 Poster] Rui Liang, **Yang Deng**, Dan Wang. “Probabilistic Building Load Forecasting via Conditional Diffusion Model”, *Best poster award Runner-up*
6. [ACM BuildSys 2023, Poster] **Yang Deng**, Rui Liang, Jiaqi Fan, Ao Li, and Dan Wang. “Towards a Benchmark for ML-based Building Load Forecasting Model Selection for a Target Building”,
7. [Patent] Dan Wang, **Yang Deng** and Samson Tai. “Intelligent Building Artificial Intelligence Model Evaluation Platform”,

## SELECTED PROJECTS

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**(1) BaiTest: A Platform for AI Evaluation in Smart Buildings** May 2023 - Oct 2025  
*(Hong Kong ITF project)*

- Led the design and development of a large-scale AI evaluation platform for smart building systems.
- Outcomes i) Published two demo papers, two poster papers, and three full papers. ii) Three awards from PolyU and the ACM SIGEnergy community. iii) Invited [talks](#) at the Hong Kong Computer Society.

**(2) Industry-funded Joint Research on Scalable HVAC Control** Jul – Aug 2025; Apr – May 2026  
*(Visiting Researcher, Osaka University; industry collaboration with Daikin)*

- Conducted scalable HVAC control research by integrating model predictive control (MPC) and reinforcement learning (RL).
- Deployed system in collaboration with Daikin, achieving 4-8% energy savings in an university building.

**(3) Engineering Parameter Calibration for 4G LTE Base Station** May 2018 - Jun 2019  
*(As the engineer in Huawei Shanghai Institute)*

- large-scale antenna parameter calibration in 4G wireless systems.

## AWARDS

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- Best Ph.D. Forum Presentation Award at ACM BuildSys 2024, Hangzhou, China
- Best Presentation Award at the 2nd PolyU Research Student Conference (PRSC 2024)
- Best Poster Runner Up - ACM e-Energy 2024, Singapore
- National 2nd Prize, National Postgraduate Mathematics Contest in Modeling, China, 2016
- HUAWEI Ingenuity Award (for the contribution of the project of Engineering Parameter Calibration), Mar 2019
- Ranked 14/1646, “Future Challenge–Helping Balloons Navigate the Weather”, Alibaba Tianchi Big Data Competition, 2018
- Ranked 6/204, “Network Signal coverage simulation” the 7th “Shannon cup” Huawei Wireless Algorithm Competition, 2019