Fan Feng

The University of Alabama, USA

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PROFESSIONAL SUMMARY

- Strong hands-on experience in the area of building modeling and simulation, data-driven modeling, and building controls
- Well trained in programming and extensive experience in coding HVAC-related models
- Creativity, passionate commitment, and strong skills in engineering

EDUCATION

Ph.D. Student   Jan. 2020 – Jun. 2021
- **Texas A&M University**
- Major: Mechanical Engineering

Ph.D. Student   Aug. 2018 – Dec. 2019
- **The University of Alabama(Transferred to Texas A&M)**
- Major: Mechanical Engineering
- GPA: 4.0/4.0
- Advisor: Dr. Zheng O'Neill
- Project: (NSF 1760834) Collaborative Research: Adaptive, Multi-Layered Fenestration Elements for Optimum Building Energy Performance and Occupant Comfort

  My tasks in this project mainly focus on several parts:

  1)Developing building and HVAC models for implementing fenestration control strategies using EnergyPlus and Modelica.

  2) Developing a data-driven control-oriented model. For this task, currently, the following algorithms have been compared with respect to the several metrics(e.g. performance, computational speed, etc.): Autoregressive model with Exogenous variables, Neural network, and Xgboost. In addition, feature engineering techniques have been applied to further improve the model performance.

  3) Developing an adaptive real-time optimal control strategy using this virtual testbed and control-oriented model.

Master of HVAC Engineering   Sep. 2015 – Mar. 2018
- **Tongji University**
- Major: Building Science
- GPA: 4.49/5.00
- Advisor: Dr. Peng Xu. I also worked with Dr. Zhengwei Li
- Projects: Chinese National Science Fund for Young Scholars (Project No. 51508394), Shanghai Pujiang Talent Program (Project No. 15PJ1408100)

  Parts of these two projects focused on how to reduce the peak electricity load of power grid by adjusting the control strategies of HVAC systems. Several strategies were devised and implemented, and finally, an optimal overall strategy of a multi-building portfolio is developed and validated in a testing bed.

Bachelor of HVC Engineering   Sep. 2011 – Jul. 2015
- **Tongji University**
- Major: Heating, Ventilation, and Air-Conditioning(HVAC)   GPA:4.47/5.00

AWARDS
- Graduate Council Fellowship in UA   2018

- China National Scholarship 2013
- First Prize Outstanding Student Scholarship 2013

SKILLS

Programming Languages

Python(Good), C/C++(Good), Matlab(Good),VBA(Familiar), SQL(Familiar), HTML/CSS/Javascript(Familiar), Modelica(Familiar)

Tools/Softwares

EnergyPlus (Good), OpenStudio (familiar), Trnsys (familiar), Dymola(Familiar)

PUBLICATIONS

[1] Bing Dong, Vishnu Prakash, Fan Feng and Zheng O'Neill. "A Review of Smart Building Sensing System for Better Indoor Environment Control." *Energy and Buildings*. 199 (2019):29-46.

[2] Fan Feng, Zhengwei Li and Zheng O'Neill. "An Automated Method to Identify The Expert Systems for Supervisory Controls in Building Systems." 2019 ASHRAE Annual Meeting. Kansas City, MO. Jun 22–26, 2019.

[3] Fan Feng and Zheng O'Neill. " Identifying Models of HVAC Systems Using ARIMAX." 2019 ASHRAE Annual Meeting. Kansas City, MO. Jun 22–26, 2019.

[4] Shunian Qiu, Fan Feng, et al. "Data Mining Based Framework to Identify Rule Based Operation Strategies for Buildings with Power Metering System." *Building Simulation*, 2018.

[5] Fan Feng , Yangyang Fu , Jin Hou and Peng Xu. "Optimizing the Topologies of HVAC Water Systems in Supertall Buildings: A Pilot Study." *Science and Technology for the Built Environment*, 2017.

[6] Fan Feng and Zhengwei Li. "A Methodology to Identify Multiple Equipment Coordinated Control with Power Metering System." *Energy Procedia*, vol. 105, Elsevier, 2017, pp. 2499–505.

[7] Fan Feng, et al. "The Status Quo of Operation of HVAC Water-Side Systems in China: A Perspective from BAS Data." *Energy Procedia*, vol. 143, Elsevier B.V., 2017, pp. 67–72, doi:10.1016/j.egypro.2017.12.649.

[8] Yingjun Ruan, Jiahui Cao, Fan Feng, and Zhengwei Li. "The role of occupant behavior in low carbon oriented residential community planning: A case study in Qingdao." Energy and Buildings 139 (2017): 385-394.

[9] Fan Feng, et al. "An Empirical Study of Influencing Factors on Residential Building Energy Consumption in Qingdao City, China." *Energy Procedia*, vol. 104, Elsevier, 2016, pp. 245–50.

[10] Yangyang Fu, Zhengwei Li, Fan Feng, and Peng Xu. "Data-quality detection and recovery for building energy management and control systems: Case study on submetering." Science and Technology for the Built Environment 22, no. 6 (2016): 798-809.

[11] Tianren Yang, Haisu Chen, Yisha Zhang, Shihao Zhang, and Fan Feng. "Towards low-carbon urban forms: A comparative study on energy efficiencies of residential neighborhoods in Chongming eco-island." Energy Procedia 88 (2016): 321-324.

[12] Li Yuan, Yingjun Ruan, Guang Yang, Fan Feng, and Zhengwei Li. "Analysis of factors influencing the energy consumption of government office buildings in Qingdao." Energy Procedia 104 (2016): 263-268.

PROFESSIONAL ORGANIZATION: ASHRAE STUDENT MEMBER