

Lingqi SU



General Information

Gender	Male
Birth	Apr. 30, 1991, in Shanghai
Nationality	Chinese
Email	su.lingqi@live.com
Languages	Chinese (mother tongue) English (full professional proficiency) German (full professional proficiency), certified C1 level equivalent

Education

Dr.-Ing. (Doctor of Engineering)

Nov. 2016 - May. 2021

Dissertation: Theoretical Analysis and Performance Evaluation of Smart Window

Key words: building and device modeling, radiant air-conditioning system, heat pump, building integrated photovoltaic

Friedrich Schiller University Jena, Germany

Graduate with "magna cum laude"

M. Eng. in Building Technology and Energy Management

Oct. 2013 - Nov. 2015

Berliner Hochschule für Technik, Germany

B. Eng., B. Eng. in Building Technology

Sep. 2009 - Sep. 2013

Cooperative double bachelor program

Tongji University, Shanghai, China and Berliner Hochschule für Technik, Germany

Rewards and Services

- MDPI topic editor “[Integrated Modeling and Analytics for Sustainable Urban Energy Systems](#)”
- Reviewer for Applied Energy, Advanced Sustainable Systems
- Excellent graduate award of Berliner Hochschule für Technik (top 5%)

Career Experiences

Senior Research Engineer and Project Manager

Engie Lab China - From Jul. 2021

Leading multiple research projects for the design and the operation optimization of district energy systems

1. IceFlake: Optimizing pipe network topology and central plant position of district heating and cooling system
2. E'DEEP: Optimizing the operation and the dynamic energy pricing of urban microgrid and district energy system
3. ALOOA: Urban-scale building energy consumption prediction
4. D'Explorer: Exploration of project potential of district energy system
5. MDO: Optimization of equipment sizing, selection, and investment strategy of district energy system during the ramp-up phase

Tasks:

- Research project conception and execution
- Code implementation and API development
- Project coordination
- Reports and publications generation

Intern in research department

Engie Lab China - Nov. 2019 - May. 2021

Participate in projects for district cooling potential analysis and smart district cooling pipe network design

Tasks:

- Cooling load model development with Python and model validation with eppy (Python + EnergyPlus)
- Pipe auto-sizing method and hydraulic model development with Python
- Development of multi-objective graph-based genetic algorithm for district cooling pipe network topology optimization

Freelance Consultant

Jan. 2018 - Jun. 2018

In cooperation with the company Hoffmann GmbH, development of a novel building heating system with concrete-brick-mixture solid seasonal thermal storage and solar thermal collector to meet the German building energy requirement KfW55 (energy consumption around 55% of the standard prototype building)

Tasks:

- Feasibility analysis, control system conception and building thermal simulation with Mathematica
- Energy performance factor calculation with Mathematica

Research Associate

Berliner Hochschule für Technik - Dec. 2015 - Dec. 2017

EU Horizon 20/20 research project “Large Area Fluidic Window” (2015 - 2017): development of a novel building transparent envelop integrated with micro-structured fluid channels and transparent photovoltaic for building energy conservation and solar energy harvesting

Tasks:

- Project coordination and deliverable creation
- Boundary and finite element analysis of fluidic window thermal and hydraulic performance with Mathematica and COMSOL Multiphysics
- Building thermal simulation model and software development, energy performance analysis with Mathematica
- Control and hydraulic system development and implementation with Raspberry Pi + Python

Student Assistant (2013 - 2015)

Berliner Hochschule für Technik - Dec. 2013 - Nov. 2015

German IFAF research project “HeatMap” and “FHKE”

“HeatMap”: development of web-based application for visualization and analysis of heating energy waste in commercial buildings to motivate users to participate in energy saving

“FHKE”: development of novel building element for radiant heating and cooling

Tasks:

- Data acquirement, measurement, and processing
- Database development and conception
- Development of building energy simulation model with Wolfram Mathematica
- Development of a simplified RC-network for the analysis of building heating energy waste

Intern

EMSI (UTC Group), Shanghai, China – Aug. 2014 - Sep. 2014

Building energy audition for five-star hotels and shopping centers

- Data measurements
- Energy performance evaluation of building central plants

Skills

Programming skills

- Scientific computing: Wolfram Mathematica, Julia
- General programming: Python
 - Web development: FastAPI
 - Machine learning: PyTorch, Torch Geometric, Scikit-Learn
 - (Convex) Optimization framework: CVXPY, Pyomo, Pymoo
- SQL, MongoDB, Redis, Linux, Docker
- COMSOL Multiphysics (Finite-Element-Analysis), Davinci Resolve (video editing)

Other Achievements

- First chair cellist of Beuth Collegium Musicum and Beuth Extra (2014 - 2017)
- Cellist of Trio IIVVII (2015 – 2017)
- First chair cellist of Chinese Folk Music Orchestra of Tongji University (2009 - 2012)
- Excellent volunteer award of Shanghai World Expo (2010)
- Volunteer at Shanghai Jazz Music Festival (2011)