

RUIJI SUN

Phone: (412) 539-7168
ruijis@berkeley.edu

1110 E Ogden Ave, Apt.309
Milwaukee, Wisconsin 53202

EDUCATION

| | | |
|------------|---|------|
| PhD | University of California at Berkeley, Building Science and Technology Advisor: Gail S. Brager, Stefano Schiavon | 2025 |
| MS | Carnegie Mellon University, Sustainable Design Thesis: "BIM and BEM Based Sustainable Architecture Design" Advisor: Dana Cupkova, Omer T. Karaguzel | 2020 |
| BE | Xi'an University of Arch & Tech, Mechanical Engineering (HVAC) Thesis: "Modeling Experiment of Air Environment in Metro Station" Advisor: Augui Li, Ying Zhang | 2017 |
| BA | Xi'an University of Arch & Tech, Architecture Design Design: "Art Museum Design" Advisor: Chunli Ma | 2017 |
| | Peking University Summer School, Life Sciences Course: "Plant Development and Molecular Biology" Advisor: Xingwang Deng | 2015 |

HONORS AND AWARDS

| | |
|--|------|
| Research Project Fellowship, NEMA Developed BIM content guidelines for electrical products | 2019 |
| Research Project Fellowship, ASHRAE Improved the interoperability of gbXML between BIM to BEM | 2019 |
| Merit Award, Solar Decathlon China Participated as Xi'an University of Arch & Tech team member | 2017 |
| Architecture Travel Grant, CAPOL Studied advanced pre-fabrication building technology | 2016 |
| 1st Prize, China Refrigeration & Air-Conditioning Industry Designed innovative LNG bus cooling systems | 2016 |
| 1st Prize, LianZhu Beijing Technology Inc. Designed and reinvented the news stand architecture | 2015 |

| | |
|---|------|
| 3rd Prize, CIOB National tournament of green building innovation Design green building utilizing recyclable materials and raining water | 2015 |
| Innovation Scholarship, Xi'an University of Arch & Tech Performed excellently in science and technology | 2015 |
| Innovation Scholarship, Xi'an University of Arch & Tech Performed excellently in science and technology | 2014 |

RESEARCH EXPERIENCE

NEMA, Pittsburgh, PA 2019

Data Scientist, Advisor: Krishnan Gowri

- Developed industry guidance to standardize electrical products data in BIM
- Researched different data structures to improve BIM models

ASHRAE, Pittsburgh, PA 2019

Data Scientist, Advisor: Weili Xu

- Researched data mapping rules of IDF and gbXML schema
- Programmed in Revit-Dynamo environment to convert HVAC systems data
- Programmed in BuildSim API to streamline cloud building energy simulation
- Developed 10 building geometry test cases to improve BIM software
- Interviewed 20 BIM and BEM industry professionals to collect issues

Center for Sustainable Landscape, Pittsburgh, PA 2019

Student, Advisor: Omer Karaguzel

- Co-simulated building energy consumption and control logics in MATLAB
- Developed and design an online dashboard with real-time data using Django
- Visualized environmental data both spatially and temporally using Matplotlib
- Measured environmental data using National Environmental Assessment Toolkit cart
- Evaluated occupants' thermal comfort by Post-Occupancy Evaluation (POE) survey

Tongji University, Shanghai, China 2017

Student, Advisor: Philip F. YUAN

- Researched VR and AR technology for CFD visualization
- Researched different architecture formation by wind visualization
- Programmed a mechanical model in wind tunnel using C++

Xi'an University of Arch & Tech, Xi'an, China 2017

Student, Advisor: Augui Li

- Analyzed piston wind airflow patterns in metro station
- Designed an experiment platform to model air environment in metro station
- Measured airflow velocity in different metro station

TEACHING EXPERIENCE

Carnegie Mellon University, Pittsburgh, PA

Aug. 2018 to Dec. 2018

Teaching Assistant, School of Architecture

- Instructed students to analyze HVAC systems and calculate energy consumption based on data from the OSIssoft PI database.
- Assisted professor Volker Hartkopf contacting and communicating with building science industries in China.

PUBLICATIONS

Sun, R. J., Hu, Z. Z., Xu, W. L., & Gowri, K. 2020, “Improving the interoperability of gbXML through redefining data mapping rules of HVAC systems,” *ASHRAE 2020 Annual Conference*.

Hu, Z. Z., Sun, R. J., Xu, W. L., & Gowri, K. 2020, “Obstacles that gbXML is facing: analysis on BIM software interoperability survey,” *ASHRAE 2020 Annual Conference*.

PROFESSIONAL TRAINING

LEED AP BD+C

Leadership in Energy and Environmental Design Accredited Professional

COMPUTER SKILLS

Programming: Python, C++, XML, Ruby, MATLAB, VB

Simulation: EnergyPlus, OpenStudio, DesignBuilder, eQUEST, COMSOL, Fluent

Modeling: AutoCAD, Revit, Rhino, Grasshopper

Design: Photoshop, Illustrator, InDesign, Dreamweaver