Richard L Kimball

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Education

Sept 2015 – Present

Drexel University, Philadelphia, PA
Ph.D., Architectural Engineering, In Progress (Est. Summer 2023)
M.S., Architectural Engineering – Building Energy and IAQ, 2020
B.S., Architectural Engineering – Mechanical Concentration, 2020

Work and Research

Aug 2020 – Present

Drexel University, Philadelphia, PA
Research Assistant – Building Science and Engineering Group
- Developed machine learning-based energy forecasting and occupant thermal comfort models for model predictive control.
- Developed software framework to implement a data predictive control strategy at the Pacific Northwest National Laboratory (PNNL) campus.
- Presented research findings at DoE project review meetings.
- Collaborated with a diverse team across Texas A&M University, Clemson University, and PNNL
- Designed a sensor plan to collect data on occupant comfort and thermal environment in university offices.
- Analyzed collected data to link qualitative occupant perceptions with quantitative thermal environment data.

Apr 2019 – Sep 2019

Wick Fisher White, Philadelphia, PA
Mechanical Designer
- Drafted drawings for mechanical and building automation system design.
- Provided consulting services directly to clients.
- Conducted site visits to perform commissioning surveys of building controls.

Sep 2017 – Mar 2018

Ewing Cole, Philadelphia, PA
Fire Protection Engineer
- Drafted various fire protection and life safety drawings for contractor use.
- Completed and assembled packages for submission to clients.
- Collaborated with architects and engineers to coordinate drawings.

Sep 2016 – Mar 2017

City of Philadelphia, Philadelphia, PA
Engineering Intern – Capital Program Office
- Led meetings with clients to begin design process.
- Prepared construction drawings to be given to contractors.
- Surveyed existing site conditions to ensure drawing accuracy.

Jul 2014 – Sep 2016

BDP International, Philadelphia, PA
Quality Assurance Intern
- Revised and streamlined user manual for company's software to accurately reflect product.
- Compiled data entered by clients and analyzed trends to enhance delivery of company's services.
- Scheduled and led daily team meetings focused on improving communication and efficiency within team.
- Prepared weekly report that contained news regarding clientele to keep company informed on partners.

Skills

Programming Languages
MATLAB, Python, Java, Microsoft SQL, mySQL, HTML

Software
EnergyPlus, Git, eQuest, HAP, Star CCM+, Revit, AutoCAD, Microsoft Office, LaTeX

Professional Interests
Building Energy Analysis, Occupant Centric Control, Machine Learning, Architectural Design, Intelligent Buildings, Built Environment Decarbonization, Building Enclosure Design, Computational Fluid Dynamics, IAQ Control, Environmental Psychology

Publications

In Progress [1] ***Kimball, RL****. 2023. SOCDASH: A Scalable Occupant Centric Data Predictive Control Framework for Residential Air Source Heat Pump-Based Systems. Ph.D. Dissertation, Drexel University. In Progress.*

In Progress [2] *Grajewski, G., Lo, J.,* ***Kimball, RL****., Vasudevan, J., Delgoshaei, P., Li, G., Heidarinejad, M. 2023. Machine Learning in the Context of Indoor Air. In Progress.*

In Progress [3] *Moussa J., Wen, J.,* ***Kimball, RL****., Chen, Z., 2023. A Review of Models Used in Heat Pump-Based HVAC System Energy Forecasting Studies. In Progress.*

Feb 2023 [4] *Yang, T., Fu, Y., O'Neill, Z.,* ***Kimball, RL.,*** *Wen, J. 2023. An Adaptive Model-predictive Control Informed Rule-based Control for Residential Cooling Operations under Extreme Weather Events. ASHRAE Winter Conference 2023.*

Oct 2022 [5] ***Kimball, RL****., Wen, J., O'Neill, Z., Yang, T., Li, Y. 2022. Developing Learning-Based Models for Occupant Centric Control. 2022 Herrick Conferences, Purdue University, West Lafayette, IN.*

June 2020 [6] ***Kimball, RL****. 2020. An Investigation to Link Thermal Comfort and Occupant Perceptions to Measured Environmental Data in University Offices. ProQuest Dissertations and Theses Global. (Accession No. 28023478).*

Honors and Awards

Mar 2023 2022-2023 Koerner Family Foundation Graduate Fellowship

June 2022 NSF IRES Second Cohort

May 2021 Otto Gessner Scholarship, Philadelphia ASHRAE Chapter

June 2020 Graduated Honors College, Drexel University

Aug 2019 Kido Black Belt, Hapkido