Tharanga Jayarathne

tharanga@bu.edu | 857-312-7209 | www.linkedin /in/tharanga-j

EDUCATION

Boston University - College of Engineering Boston, MA
PhD. Mechanical Engineering (Sep 2022)
Advisor: Michael Gevelber
Thesis: Measuring and Understanding Air Leaks in Multifamily Buildings.

- Distinguished Mechanical Engineering Fellow, Boston University, 2016.

University of Moratuwa Sri Lanka
Bachelor of Science in Mechanical Engineering (Apr 2014)
Thesis: Self-navigating upgradeable multipurpose robotic platform for domestic use.

- Mahapola Merit Scholarship, University of Moratuwa, Sri Lanka, 2010.

RESEARCH PROJECTS

Boston University: Process Control Lab
Graduate Research Fellow

Advanced measurement and modelling procedure for zonal infiltration and compartmentalization in multifamily residential buildings (DOE - Building America)

- Developed the mathematical model and testing procedure for a new infiltration testing method and created numerical models to simulate leak flow measurements in multifamily buildings
- Fabricated and tested equipment required for new testing procedure and performed real world testing in low and mid-rise buildings
- Trained five masters/undergraduate students to perform infiltration testing and analyze data

Development and performance analysis of a new optimized HVAC control architecture for minimizing HVAC energy use while maintaining high IAQ levels in commercial office buildings (Mass - CEC Catalyst)

- Developed and tested a new HVAC control system that maintains desired level of IAQ and reduce up to 40% HVAC energy use
- Created a dynamic CO_2 model and experimentally tested in three classes of occupied spaces

Occupancy sensing for commercial venues (ARPA-E)

- Evaluated HVAC energy savings and cost implications of new computer occupancy sensing system (COSSY) for 8 major cities in 5 climate zones

University of Moratuwa, Sri Lanka: Mechatronics System Lab

Upgradeable mobile robotic platform for smart application (uroamx.wordpress.com)

- Designed, built and, tested an Arduino based remotely controllable mobile platform in a team of 3 engineers

EXPERIENCE

Diesel and Motor Engineering Sri Lanka
Mechanical Engineer (Apr 2014 - Jul 2016)

- Designed water and wastewater management systems in commercial buildings, water treatment plants and municipal water supply schemes and coordinated with service team for construction, commissioning, and testing

PUBLICATIONS

Advanced Zonal Infiltration Measurement Method for Multifamily Buildings: A Novel Test Procedure to Determine Air Leakage Through External and Internal Surfaces.
T. Jayarathne, M. Browne, M. Gevelber (ASHRAE, 2021)

Testing and Validation of Developed Upgradable Mobile Platform for Smart Applications.
P. Geekiyanage, I. Jayasinghe, **T. Jayarathne**, R. Amarasinghe (IJAIST, 2015)

Development of Upgradable Mobile Platform for Smart Applications.
P. Geekiyanage, **T. Jayarathne,** I. Jayasinghe, R. Amarasinghe (ICST-IEEE, 2013)

SKILLS & INTERESTS

Technical: MATLAB, Python, Excel, SolidWorks, AutoCAD, GibbsCAM, CNC Milling
Interests: Hiking, Guitar, Photography, Puzzles and Riddles