ANJUKAN KATHIRGAMANATHAN

Senior Data Scientist, PhD, Engineer, WEF Global Shaper

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EDUCATION

PGDip in Business and Management

Queen's University Belfast

Mar 2021 – Mar 2022

Course delivered by the William J Clinton Leadership Institute.

PhD in Engineering

University College Dublin

Jan 2017 – Dec 2020

Thesis title: "Unlocking Energy Flexibility in Commercial Buildings through Data-Driven Techniques"

- Guest lecturer at University of Jaffna for "Society and the Engineer" module
- Currently involved with International Energy Agency (IEA) EBC Annex 81 - Data-driven Smart Buildings
- Was involved with International Energy Agency (IEA) EBC Annex 67 - Energy Flexible Buildings
- Ranked 2nd in CityLearn Challenge for Reinforcement Learning applied to District Demand Side Management
- Completed Professional Diploma in Data Science (Unofficial)
- Completed Climate-KIC Journey Summer School 2019
- Completed DYNASTEE Summer School in Dynamic Methods for Whole Building Energy Assessment 2017, Granada, Spain
- ASHRAE UCD Student Chapter President 2018/2019 2019/2020
- Knowledge Transfer (KT) Scouts Initiative 2019 (UCD)
- Participated in InnovationAcademy@ESB Programme

BE(Hons) in Mechanical Engineering

University of Auckland

Jan 2008 – Jan 2012

EXPERIENCE

Senior Data Scientist

GridBeyond

Feb 2021 - Ongoing Dublin, Ireland

- Supported in partnership with Intertrade Ireland Innovation Boost Programme
- Supporting the development of algorithmic trading capabilities
- Development of sizing and dispatch optimisation models for batteries, CHPs, gas peakers
- Developed probabilistic forecasters for wholesale market prices

PROUD OF

Climate Reality Leadership Corp 2020

World Economic Forum Global Shaper
Member of Dublin Hub

Universitas-21 PhD Travel Award 2019
Allowed exchange in NUS, Singapore

ESIPP PhD Scholarship
Awarded by University College Dublin

Rotary Young Leaders Award (RYLA) 2015

Senior Scholar Award
University of Auckland

Faculty of Engineering Dean's Honours List
2009, 2010 and 2011, University of Auckland

Senior Prize in Mechanical Engineering
2009 and 2010, University of Auckland

Annual Prize for Top Student in Mechanical Engineering
2009, University of Auckland

Faculty of Engineering Undergraduate Scholarship
2009, The University of Auckland

Jubilee Scholarship
2008, The University of Auckland

Dux
2008, Selwyn College, Auckland, New Zealand

EXPERIENCE (CONT.)

Stress Engineer

AIMAltitude

Feb 2012 – Nov 2016 | Auckland, New Zealand

- Structural substantiation of aircraft interior cabin monuments using FEA and hand calculations.
- Preparing structural substantiation reports for interface loads generation, stress analysis and structural testing.
- Mentoring and leading a team of junior engineers within projects

PUBLICATIONS

Journal Papers (Select)

- Kathirgamanathan, Anjukan, Mattia De Rosa, et al. (2020). "Data-driven Predictive Control for Unlocking Building Energy Flexibility: A Review". In: *Renewable and Sustainable Energy Reviews* 135.January 2021, p. 110120. ISSN: 1364-0321. DOI: 10.1016/j.rser.2020.110120.
- Kathirgamanathan, Anjukan, Thibault Péan, et al. (2020). "Towards standardising market-independent indicators for quantifying energy flexibility in buildings". In: *Energy and Buildings* 220, p. 110027. ISSN: 0378-7788. DOI: https://doi.org/10.1016/j.enbuild.2020.110027.
- Miller, C. et al. (2020). "The Building Data Genome Project 2, energy meter data from the ASHRAE Great Energy Predictor III competition". In: *Scientific Data* 7.1. ISSN: 20524463. DOI: 10.1038/s41597-020-00712-x.

Conference Proceedings (Select)

- Kathirgamanathan, Anjukan, Mattia De Rosa, et al. (2019). "Feature Assessment in Data-driven Models for unlocking Building Energy Flexibility". In: *IBPSA BS 2019. 2-4 September, 2019, Rome, Italy.* Rome.
- Kathirgamanathan, Anjukan, Killian Murphy, et al. (2018). "Aggregation of Energy Flexibility of Commercial Buildings". In: *Proceedings of eSim 2018, the 10th conference of IBPSA-Canada Montréal, QC, Canada, May 9-10, 2018*. Montreal, pp. 173–182. ISBN: 9782921145886.

VOLUNTEER EXPERIENCE

Leadership Network Member

Asia New Zealand Foundation

July 2016 – Ongoing

- Global professional network focused on developing and maintaining strong links between Asia and New Zealand. Attended the following events:
  - South India Hui - Part of delegation visiting South India to develop links between New Zealand and India
  - Sustainability Hui

President

Auckland Tamil Sports Club

May 2015 – May 2016 | Auckland, New Zealand

- Lead a community sports club of approximately 150 members with the following achievements:
  - Increased family membership by 28% from the previous year
  - Prepared funding proposals for grant agencies and had a 100% success rate receiving over $17000 for use in community projects and showing accountability for this

STRENGTHS

Building Energy Simulation (EP & DB)
Machine Learning | Forecasting
Reinforcement Learning
Python - NumPy, Sklearn, Tensorflow
Python - PyTorch, Pandas
Optimisation - LP, MILP, MINLP
Data Engineering | Azure DevOps
Website Development
Funding/Grant Application Preparation
Event Management

LANGUAGES

English	●●●●●
Tamil	●●●●○
German	●○○○○
Python	●●●●●
R	●●●○○
Bash	●●●○○
Git	●●●●○
MATLAB	●●●○○

REFEREES

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