

ANJUKAN KATHIRGAMANATHAN

Phd Student, Engineer, Data Scientist, Teacher

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EDUCATION

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

Tutor

Dublin Tutorial Centre

Nov 2017 – May 2020

Dublin, Ireland

- Edexcel International AS & A2 Physics Classes

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

PROUD OF



Climate Reality Leadership Corp
2020



World Economic Forum Global
Shaper
Member of Dublin Hub



Clinton Global Initiative (CGI) Univer-
sity Cohort 2019/2020



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 Hon-
ours List
2009, 2010 and 2011, University of
Auckland



Senior Prize in Mechanical Engineer-
ing
2009 and 2010, University of Auck-
land



Annual Prize for Top Student in Me-
chanical Engineering
2009, University of Auckland



Faculty of Engineering Undergradu-
ate Scholarship
2009, The University of Auckland





Jubilee Scholarship
2008, The University of Auckland





Dux
2008, Selwyn College, Auckland, New
Zealand

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](https://doi.org/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, Clayton et al. (2020). "The Building Data Genome Project 2 – Energy meter data from the ASHRAE Great Energy Predictor III competition". In: arXiv: 2006.02273 [stat.AP].

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

Co-Teacher

STEAM-Ed

 Feb 2019 – Ongoing

 Dublin, Ireland

- Co-teacher for STEAM-Ed for 'Engineering-in-a-box' outreach Programme at St Brigid's Primary School, Ballsbridge, Dublin.

Communications Committee

Old Wesley Touch Rugby

 Jan 2019 – Ongoing

 Dublin, Ireland

- Responsible for development and maintenance of the [club website](#)

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

Reinforcement Learning

Python - NumPy, Sklearn, Tensorflow

Python - PyTorch, Pandas

Optimisation

Website Development

Funding/Grant Application Preparation

Event Management

LANGUAGES

English



Tamil



German



Python



R



Bash



Git



MATLAB



REFEREES

Assoc Prof. Donal Finn

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Auckland, New Zealand