

ANJUKAN KATHIRGAMANATHAN

PhD, Senior Quant and Machine Learning Engineer

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EXPERIENCE

Senior Quant and Machine Learning Engineer

Sympower

Sept 2025 - Ongoing

Dublin, Ireland

- Focussed on supporting the development and evolution of the Sympower Multi-Market Optimisation (MMO) offering for battery assets in the Nordic region
- Take ownership of implementing production-worthy, scalable machine learning models, with a focus on forecasting, optimisation and trading strategies use cases.
- Conduct quantitative research and backtesting to demonstrate the value of forecasting, trading signal generation, and optimisation models to business stakeholders.
- Develop batch and streaming machine learning pipelines with the full Databricks stack, with a strong focus on software engineering best practices.

Senior Data Scientist

GridBeyond

Feb 2022 - Aug 2025

Dublin, Ireland

- Lead data scientist for FoTm battery energy storage trading cockpit development for IE, UK and ERCOT (Texas, US) markets. Involved heavily in designing architecture of the products.
- Design and development of AI/machine learning forecasters for market prices (day-ahead, intraday, balancing mechanism/real-time, ancillary services) and ancillary service deployments
- Design and development of optimisation software providing data-driven trading recommendations
- Good understanding of market design and regulations for IE, UK and ERCOT markets.
- Design and development of market simulation/backcast engines for backcasting forecasting and trading performance
- Experience productising software on Microsoft Azure ecosystem and use of AzureML for MLOps
- High-level of customer and stakeholder engagement experience, involved in Series C funding round investor and customer sales calls giving demos of product and outlining data science value add
- Team player working with both onshore and offshore teams cross-functionally along with working with third party vendors

Data Scientist

GridBeyond

Feb 2021 - Jan 2022

Dublin, Ireland

- Developed load forecasters for various manufacturing and industrial customers
- Development of sizing and dispatch optimisation models for batteries at industrial customers
- Developed PyPSA models for techno-economic modelling of microgrids

PROUD OF

🏆 Guest Speaker on Hypercube Podcast Reinforcement Learning in the Energy Sector

🏆 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

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

EDUCATION

PGDip in Business and Management

Queen's University Belfast

Mar 2021 – Mar 2022

Course delivered by the William J Clinton Leadership Institute. Passed with commendations.

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
- Involved with International Energy Agency (IEA) EBC Annex 81 - Data-driven Smart Buildings
- 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
- Knowledge Transfer (KT) Scouts Initiative 2019 (UCD)
- Participated in InnovationAcademy@ESB Programme

BE(Hons) in Mechanical Engineering

University of Auckland

Jan 2008 – Jan 2012

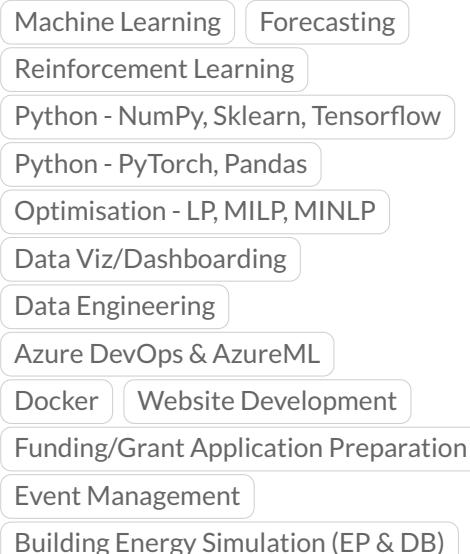
- Achieved a GPA of more than 8.875 out of 9
- Received the Senior Scholar award.

PUBLICATIONS

Journal Papers (Select)

- Kathirgamanathan, Anjukan, Eleni Mangina, and Donal P. Finn (2021). "Development of a Soft Actor Critic deep reinforcement learning approach for harnessing energy flexibility in a Large Office building". In: *Energy and AI* 5.January 2021, p. 110120. ISSN: 2666-5468. DOI: [10.1016/j.egyai.2021.100101](https://doi.org/10.1016/j.egyai.2021.100101). ↗
- 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). ↗

STRENGTHS



LANGUAGES



REFEREES

Brian Gahan

@ CTO, EasyGo

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Dublin, Ireland

Prof. Donal Finn

@ School of Mechanical and Materials Engineering, University College Dublin

✉ donal.finn@ucd.ie

Dublin, Ireland

Dr Prageeth Jayathissa

@ Sustainability Partner, Vector

✉ Prageeth.Jayathissa@vector.co.nz

Auckland, New Zealand

- 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](https://doi.org/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.

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:
 - Part of delegation visiting Taiwan to develop links between New Zealand Taiwan
 - **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