ANJUKAN KATHIRGAMANATHAN

PhD, Senior Data Scientist

⚲ **Dublin, Ireland** **in** http://linkedin.com/in/anjukan-kathirgamanathan-aa985528/
⚙ github.com/anjukan

EXPERIENCE

Senior Data Scientist
GridBeyond

📅 Feb 2022 - Ongoing　　　　⚲ Dublin, Ireland

- Lead data scientist for FoTm battery energy storage trading cockpit development for IE, UK and ERCOT (Texas, US) markets
- Developer of AI/machine learning forecasters for market prices (day-ahead, intraday, balancing mechanism/real-time, ancillary services) and ancillary service deployments
- Developer of optimisers and formulating the mathematical model for solving
- Developer of state-of-charge (SoC) forecasting model for the trading cockpit
- Developer of market simulation/backcast engines for backcasting forecasting and trading performance
- Experience productising software on Microsoft Azure ecosystem
- 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

Data Scientist
GridBeyond

📅 Feb 2021 - Jan 2022　　　　⚲ Dublin, Ireland

- Supported in partnership with Intertrade Ireland Innovation Boost Programme
- Developed load forecasters for various manufacturing and industrial customers
- Development of sizing and dispatch optimisation models for batteries at industrial customers
- Involved in battery state of health modelling and optimisation
- Developed probabilistic forecasters for wholesale market prices (IE day-ahead and intraday markets, UK day-ahead and intraday markets)

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

🏆 **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

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
- Knowledge Transfer (KT) Scouts Initiative 2019 (UCD)
- Participated in InnovationAcademy@ESB Programme

BE(Hons) in Mechanical Engineering
University of Auckland

📅 Jan 2008 – Jan 2012

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. ➡.
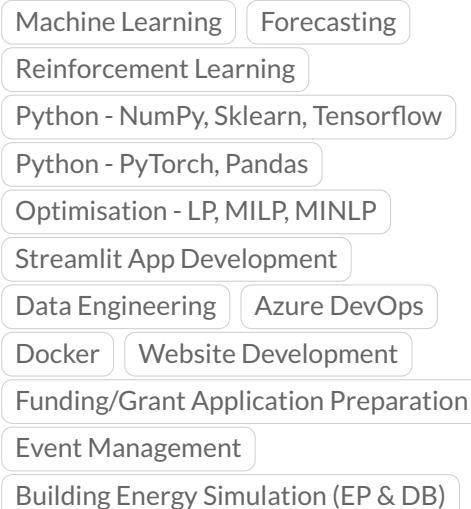
VOLUNTEER EXPERIENCE

Leadership Network Member
Asia New Zealand Foundation

📅 July 2016 – Ongoing

STRENGTHS

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

LANGUAGES

Language	
English	●●●●●
Tamil	●●●●○
French	●○○○○
Python	●●●●●
R	●●●○○
Bash	●●●○○
Git	●●●●○
MATLAB	●●●○○

REFEREES

Assoc Prof. Donal Finn
@ School of Mechanical and Materials Engineering, University College Dublin
✉ donal.finn@ucd.ie
Dublin, Ireland

Prageeth Jayathissa
@ Sustainability Partner, Vector
✉ Prageeth.Jayathissa@vector.co.nz
Auckland, New Zealand

- 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