

# Anjukan Kathirgamanathan's Curriculum Vitae

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## CONTACT

### INFORMATION

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## EDUCATION

2017-2020 **University College Dublin, Ireland**

**PhD** in Engineering.

- Topic of research is "Unlocking Energy Flexibility in Commercial Buildings through Data-Driven Techniques".
- Involved with International Energy Agency (IEA) EBC Annex 67 - Energy Flexible Buildings
- Modules Completed:
  - Energy Systems in Buildings II
  - Introduction to Data Analytics
  - Power Systems Operation
  - Data Mining
  - Advanced Data Analytics
  - Data Programming with R
- Courses Completed:
  - Professional Diploma in Data Science (Unofficial)
  - DYNASTEE Summer School in Dynamic Methods for Whole Building Energy Assessment 2017, Granada, Spain
- Other Activities:
  - ASHRAE UCD Student Chapter President 2018/2019
  - Participated in theInnovationAcademy@ESB Programme
  - Participated in Correlation One Dublin Datathon, 2017 & 2018
  - Part of Knowledge Transfer (KT) Scouts Initiative (UCD)

2008-2011 **The University of Auckland, Auckland, New Zealand**

**BE(Hons)** in Mechanical Engineering.

- First Class Honours
- Undertook a final year project in Finite Element Modelling of Composite Structures. The project aimed to validate the performance of Solid-Shell elements as compared to Shell elements. The other aspect of this project was the FE modelling of the compressive and impact behavior of sandwich structures and validating this against experimental results.

2005-2008 **High School - Selwyn College, Auckland, New Zealand**

## AWARDS &

### SCHOLARSHIPS

- Recipient of Universitas-21 PhD Travel Award 2019 to undertake research in NUS, Singapore
- Runner-Up - Best Oral Presentation at Irish Postgraduate Research Conference 2018

- ESIPP PhD Scholarship awarded by UCD
- Rotary Young Leaders Award (RYLA) 2015
- Senior Scholar Award from the University of Auckland for top students from each course
- Co-awarded Fisher and Paykel Part 4 Project Award for Mechanical Engineering Final Year Project (2011)
- First in Course Award for "Acoustics for Engineers" (2011)
- Earned a place in the Faculty of Engineering Dean's Honours List for 2011, 2010 and 2009
- Senior Prize in Mechanical Engineering (2010, 2009)
- Annual Prize for Top Student in Mechanical Engineering, The University of Auckland (2009)
- Summer Research Scholarship, The University of Auckland, New Zealand (2009)
- Faculty of Engineering Undergraduate Scholarship, The University of Auckland, New Zealand (2009)
- Jubilee Scholarship, The University of Auckland, New Zealand (2008)
- NZQA Scholarship Award for 2008 Scholarship Exams
- Dux of Selwyn College, Auckland, New Zealand (2008)

#### KEY SKILLS

- Building Energy Simulation - Energyplus & Designbuilder
- Analysis tools: GAMS, MATLAB
- Machine Learning: Feature selection/engineering, classification, regression, PCA
- Coding: Python (Pandas, NumPy, Scikit-learn), R, ANSYS APDL, C++.
- Funding Application Preparation
- Website Development
- Word Processing: Competent with *LaTeX* and MS Office products.
- Finite Element Analysis with experience in:
  - FEMAP with NX Nastran
  - ANSYS Classic and Workbench (linear and non-linear)
  - ABAQUS
- Stress Analysis
- Experience preparing structural substantiation documents to show compliance with 14CFR Part 25 / EASA CS25 regulations. Familiarity with relevant regulations for certifying aircraft interiors.

#### PUBLICATIONS

- Kathirgamanathan, A., Murphy, K., De Rosa, M., Mangina, E., Finn, D.P., Aggregation of Energy Flexibility of Commercial Buildings, Proceedings of eSim 2018, the 10th conference of IBPSA-Canada, Montreal, QC, Canada, May 9-10, 2018.

## EMPLOYMENT

Nov. 2017 - **Tutor - Dublin Tutorial Centre, Ireland**

Tutor for Edexcel International A-Level Physics class

Feb. 2012 - Nov. 2016 **Engineer - AIMAltitude, Auckland, New Zealand**

Engineer at AIMAltitude with primary role being:

- 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

March 2011 - Jan. 2012 **FE Modeller - Light Metals Research Centre, The University of Auckland, New Zealand**

Responsible for the development of 2D Thermal-Electric Aluminium Cell Slice FE Model using ANSYS APDL. Also provided FEA consulting to an external client for the Thermal-Electric modelling of a high temperature/high pressure synthesis system for production of superhard materials.

Summer 2010/2011 **Summer Internship - Altitude Aerospace Interiors Ltd, Auckland, New Zealand**

Gained understanding of and created engineering documents relating to Configuration, Substantiation and Continued Airworthiness of aircraft interiors. Involved with Integration work using and analyzing Boeing engineering drawings and documents.

May 2010 - Nov. 2010 **FE Modeller - Light Metals Research Centre, The University of Auckland, New Zealand**

Involved with documentation of Thermal-Electric model of Aluminium Reduction Cell in Aluminium Smelting utilising ANSYS Mechanical APDL. Created several thermal-electric models related to reduction cells using APDL Scripting in ANSYS.

## EMPLOYMENT (VOLUNTARY)

January 2019 - **Member of Communications committee for Donnybrook Touch Rugby Club**

Responsible for development and maintenance of club website.

July 2016 - **Leadership Network Member - Asia New Zealand Foundation**

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

May 2015 - May 2016 **President - Auckland Tamil Sports Club**

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
- Responsible for the start of a now annual junior football coaching programme
- Organized and executed various tournaments & fundraiser social events

Previous roles with the club were:

- May 2014 - May 2015 - Treasurer & Football Coordinator
- May 2013 - May 2014 - Webmaster - Responsible for management of club website and social media

March 2011- Nov. 2016 **Ambassador & Mentor - IPENZ Futureintech**

Ambassador supporting the aims of Futureintech to encourage school students to choose a career in engineering, science and technology.

Aug. 2014- Nov. 2016 **Joint Secretary - New Zealand Thirumurugan Temple Society**

Involved with the administration of the Thirumurugan Hindu Temple.

#### REFEREES

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