When data speaks out: AI as a Climate Change Activist

By Saeed Misaghian

PhD Researcher   University College Dublin
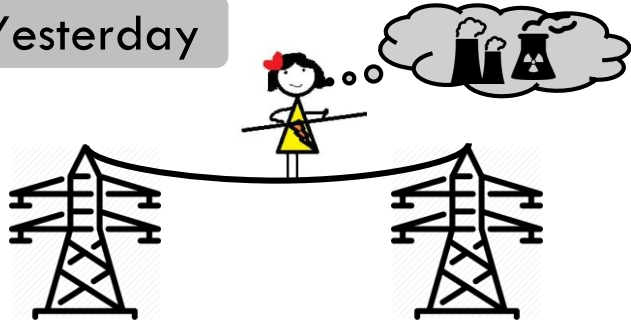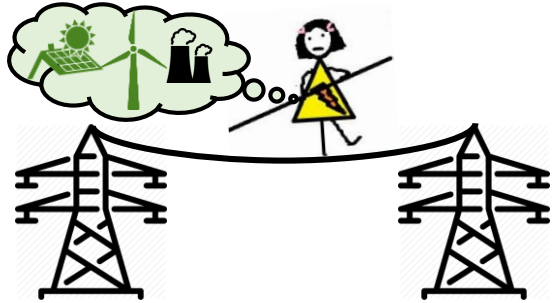
UCD DUBLIN
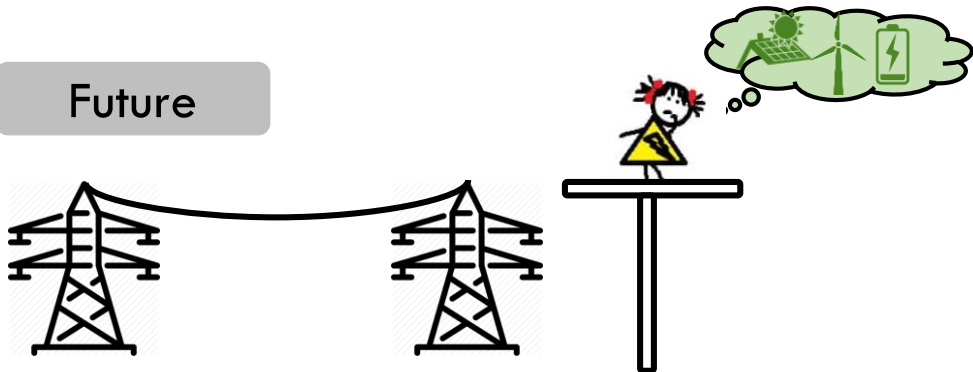
Climate Change

Yesterday

Today

Future

Irish wind penetration in electricity network in terms of % total demand

2014

Wind penetration (%)

Source: http://www.eirgridgroup.com
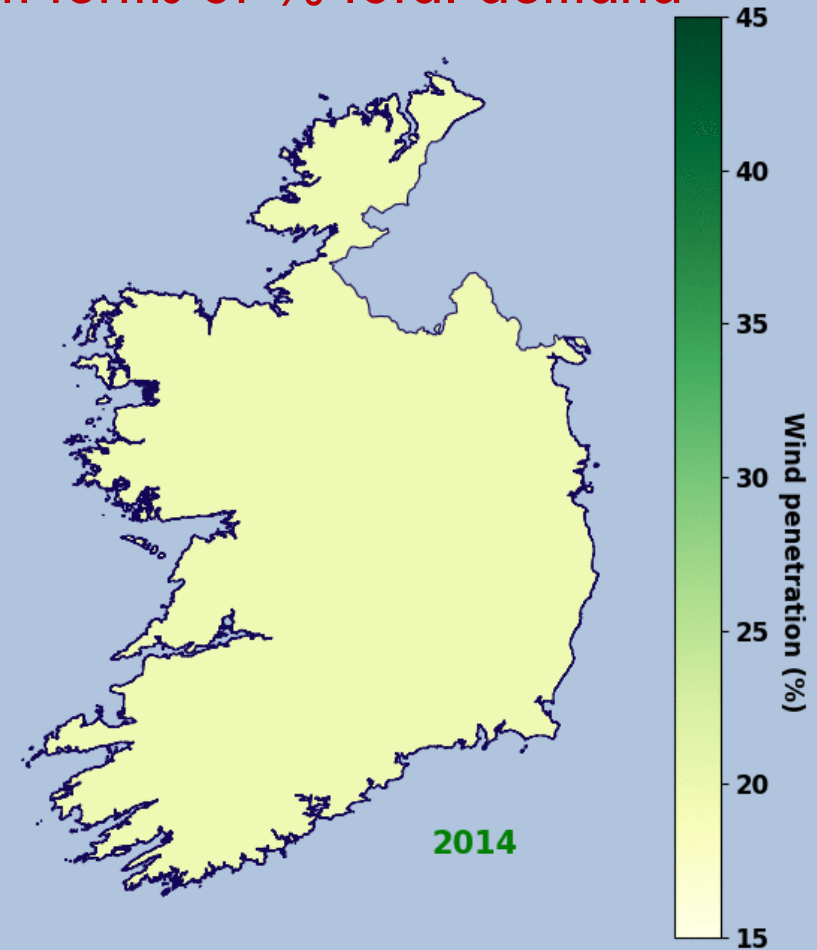
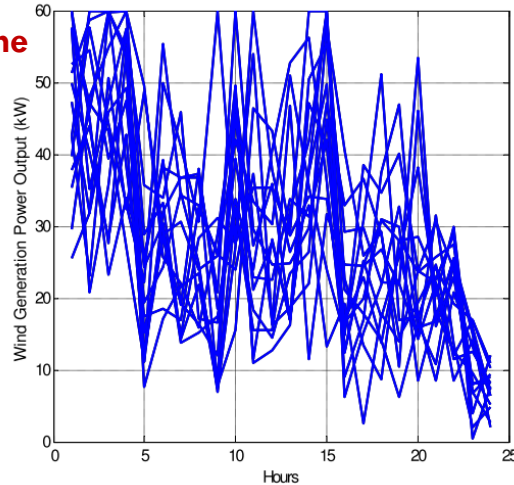By Saeed Misaghian & Ciara O'Dwyer

Optimisation
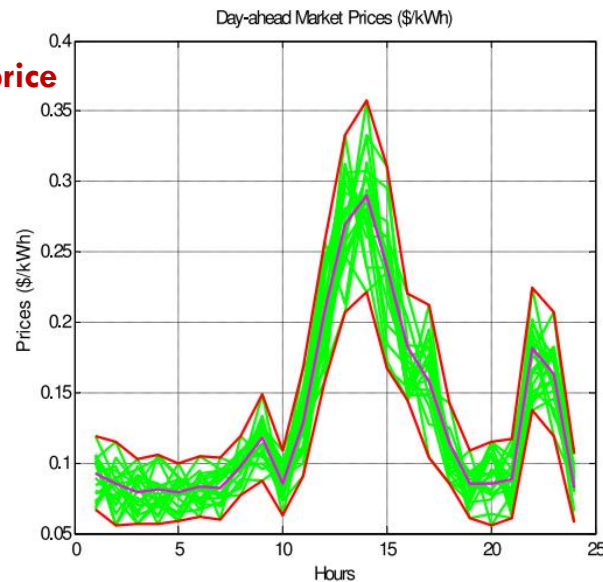
Optimisation
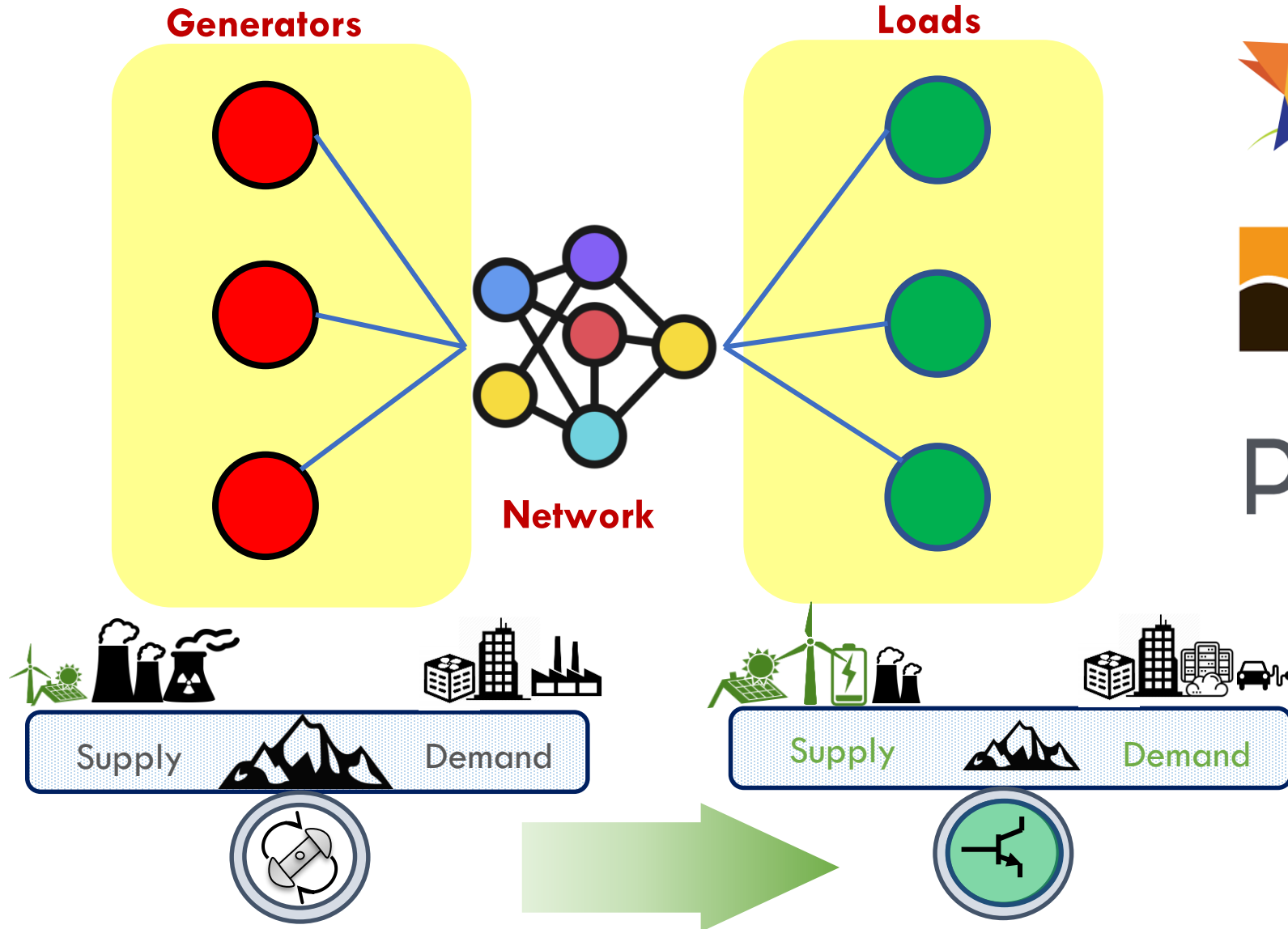
Units Scheduling
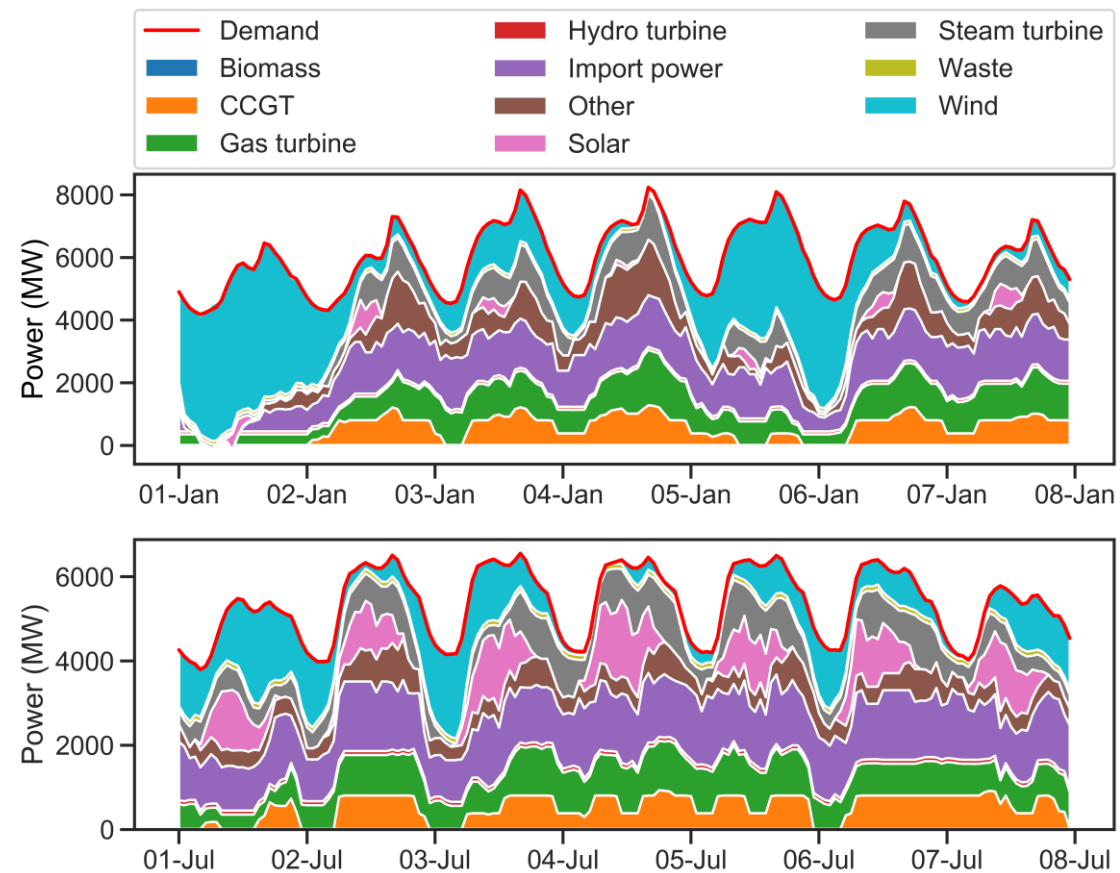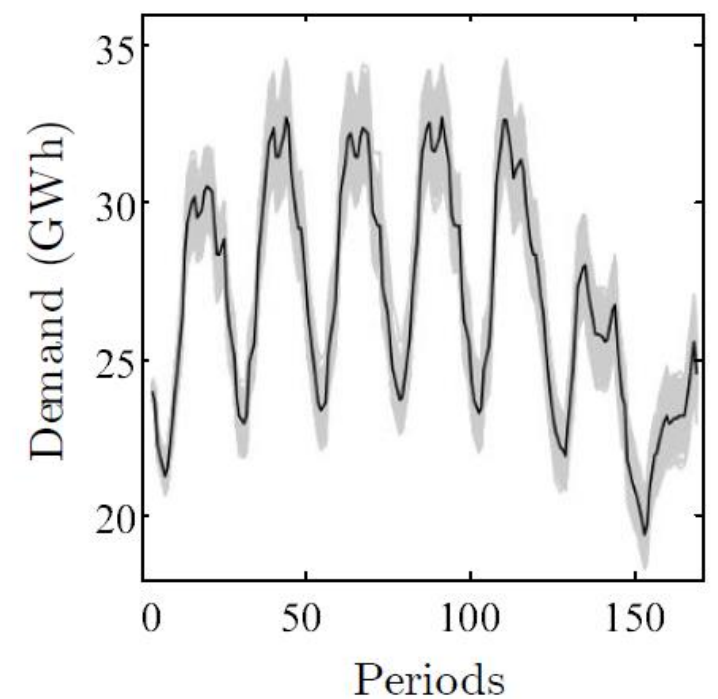
Uncertainty Modelling

Wind turbine

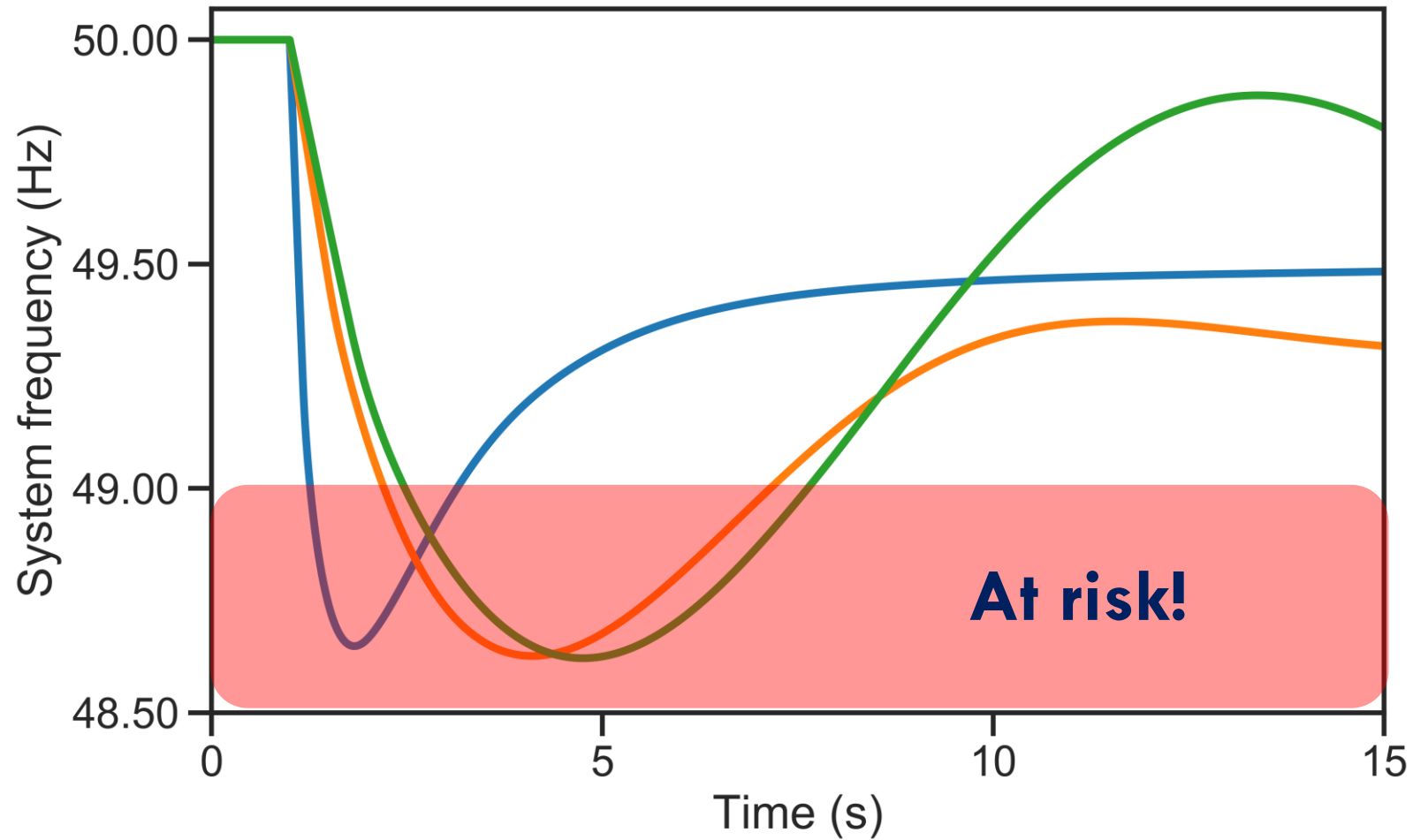**Market price**

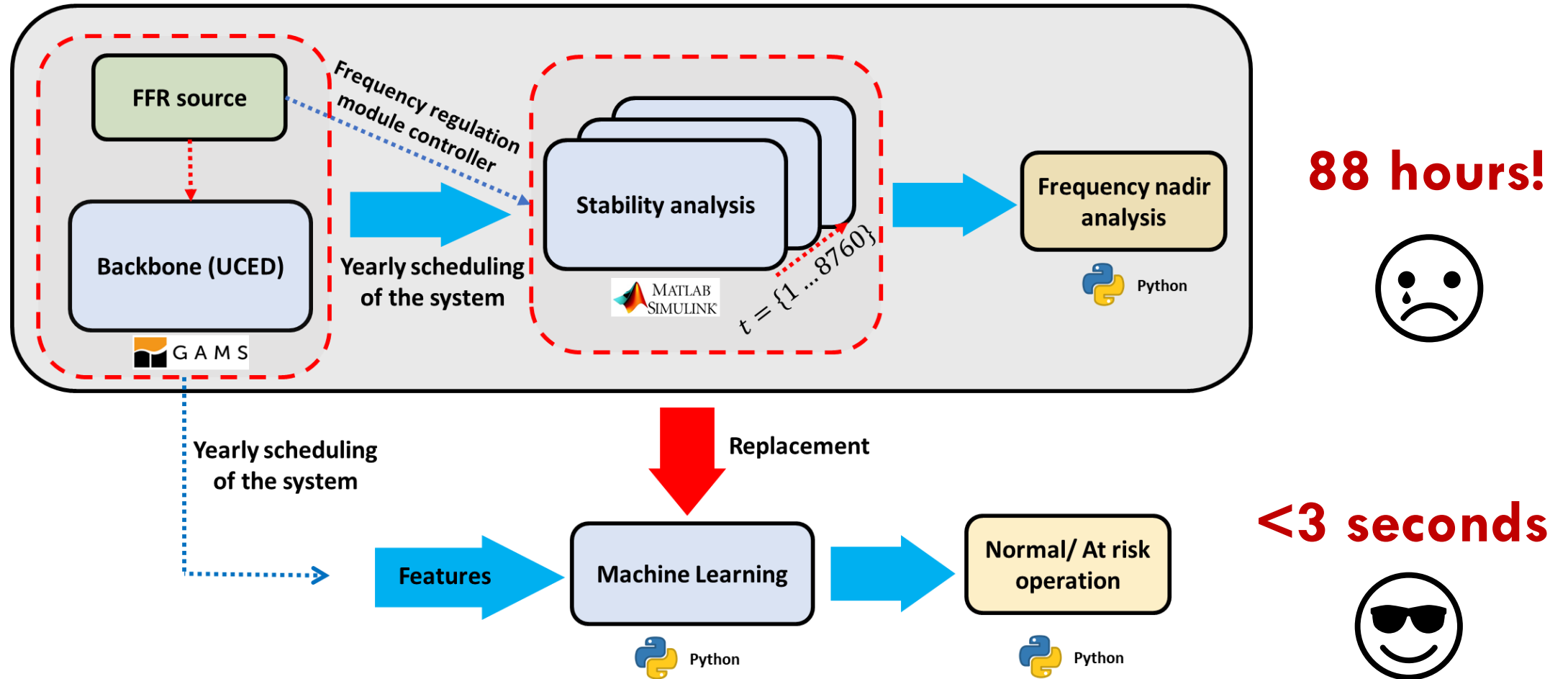## Scenario generation & reduction ☺
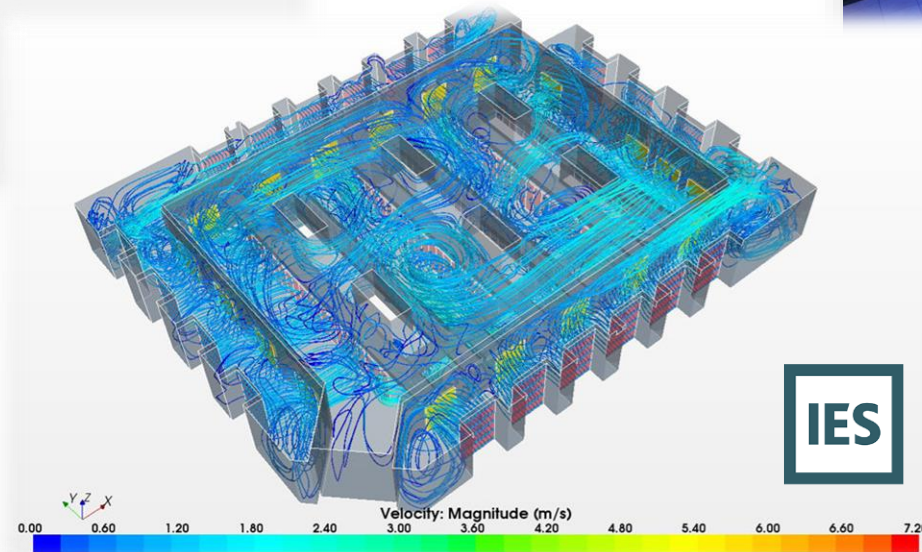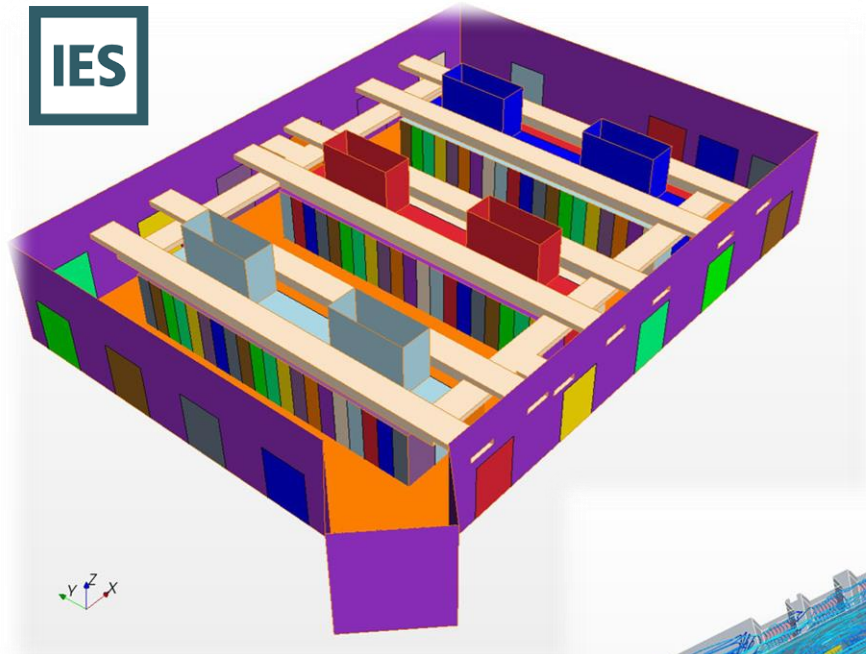
Market price
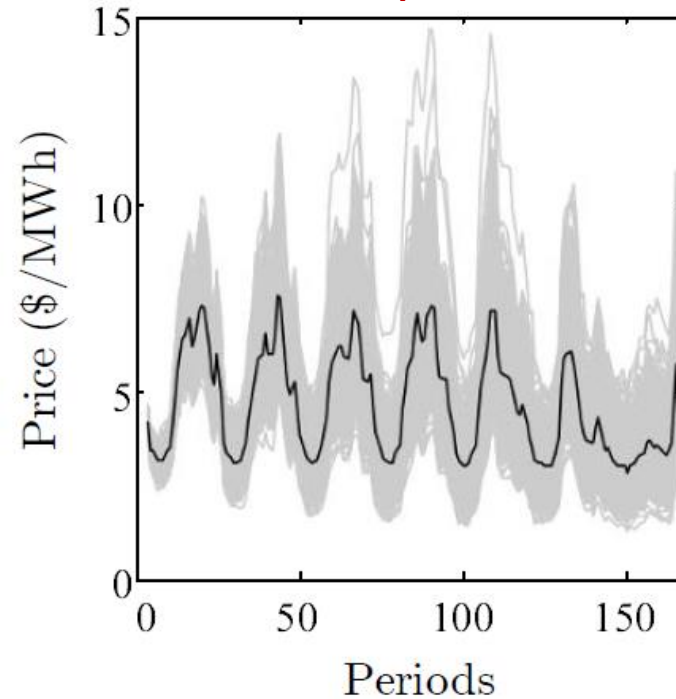
Demand

Decision Making Under Uncertainty in Electricity Markets, Conejo

Bidding Strategy for Microgrid in Day-Ahead Market Based on Hybrid Stochastic/Robust Optimization

System Security

At risk!

Power System Dynamic Security Analysis, Integrating Supervised Machine Learning Classification Approach.
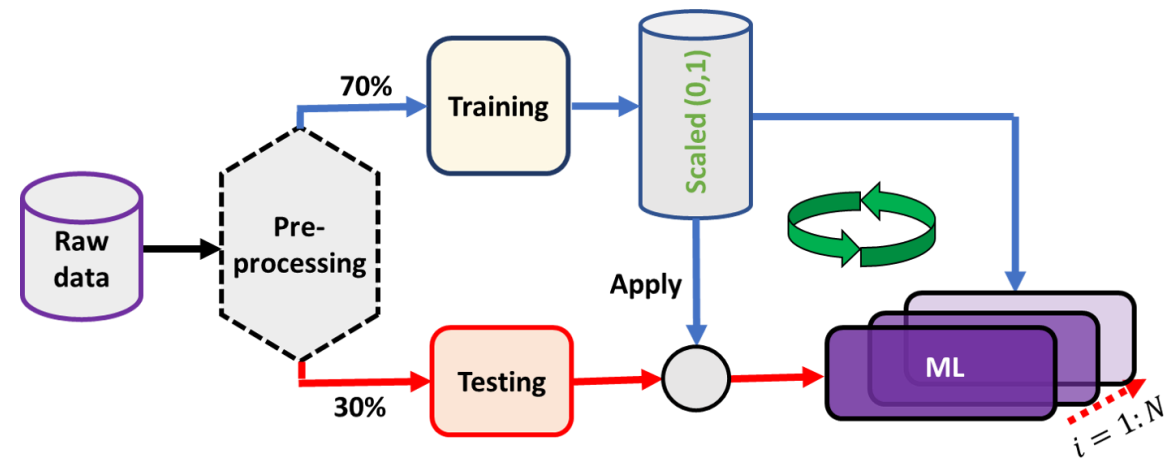Saeed Misaghian, Áine Byrne, Ciara O'Dwyer, Damian Flynn

Machine Learning-Classification

Power System Dynamic Security Analysis, Integrating Supervised Machine Learning Classification Approach.
Saeed Misaghian, Áine Byrne, Ciara O'Dwyer, Damian Flynn
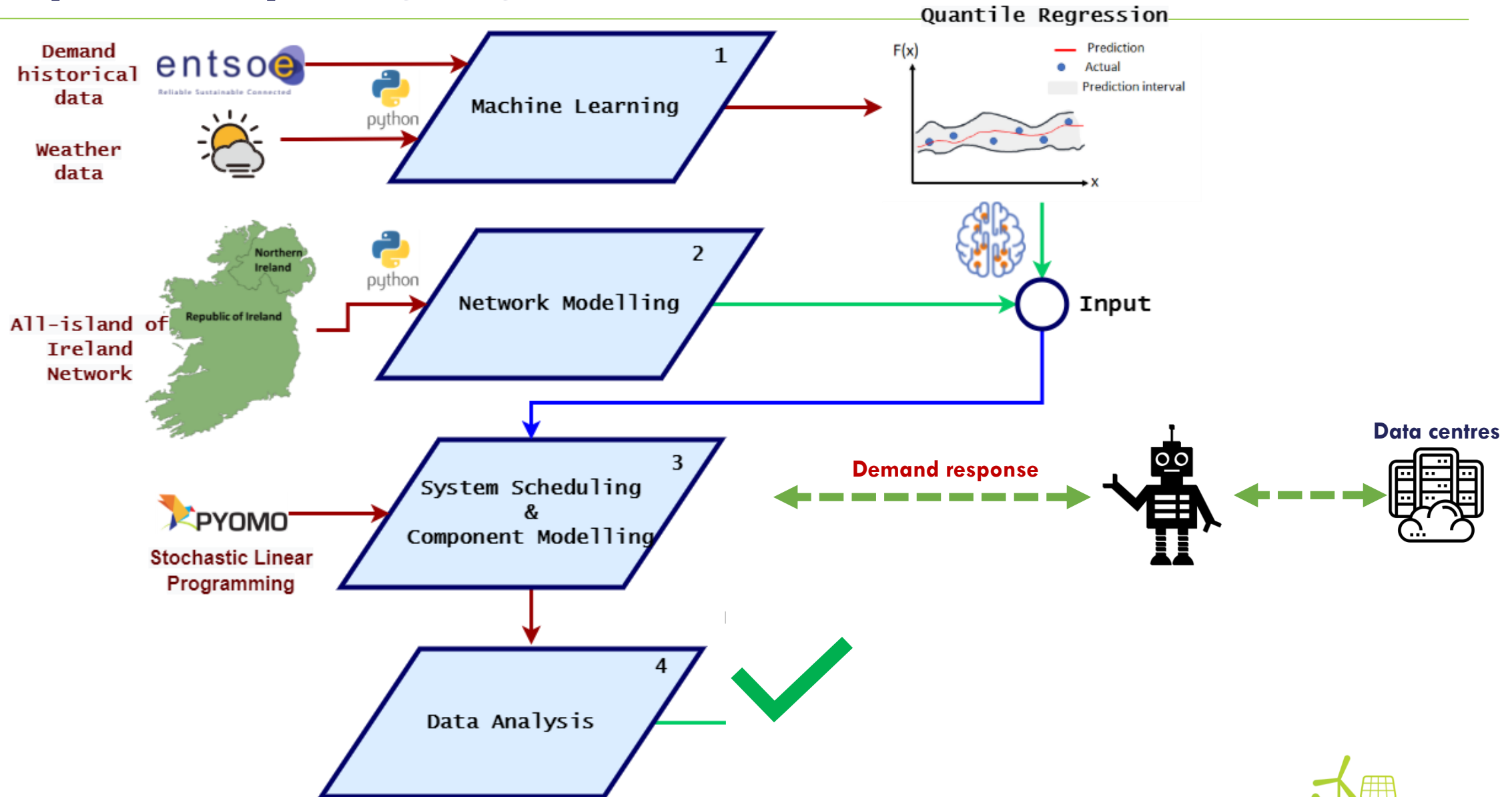
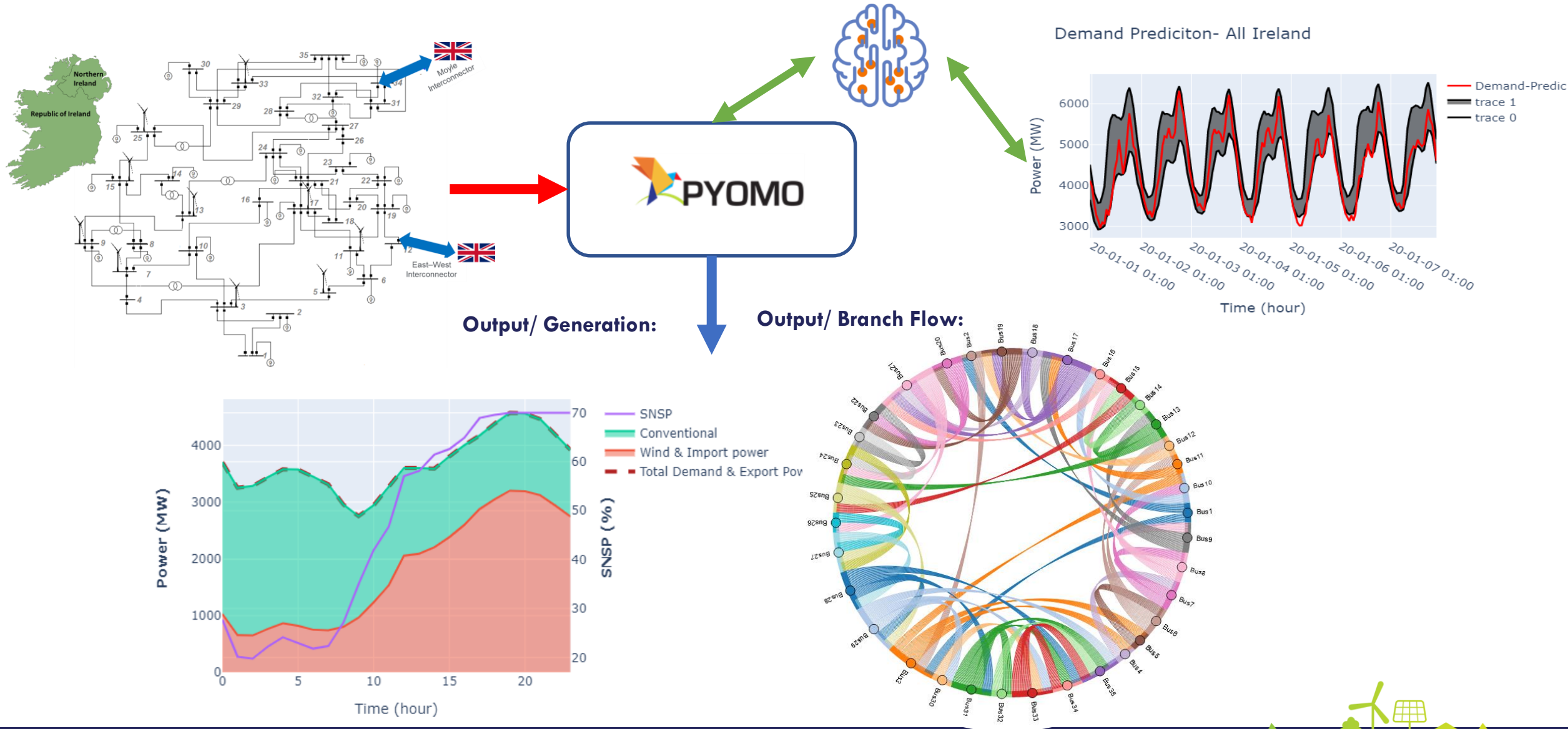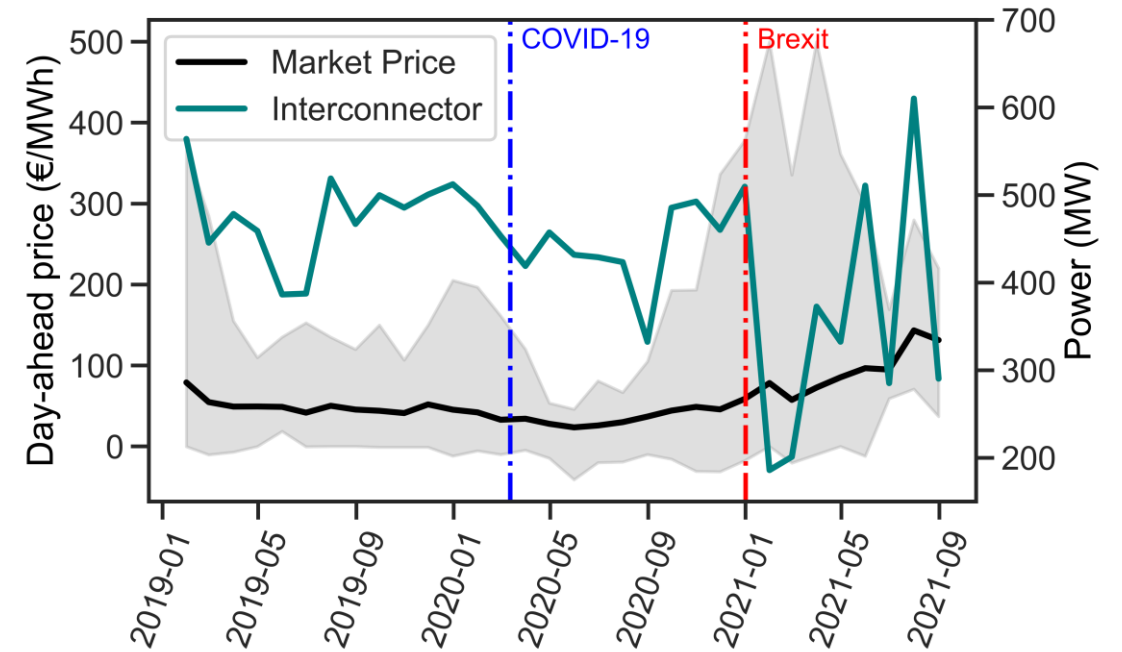# End-Use Modelling; Data Centres

Bridging Optimisation & AI
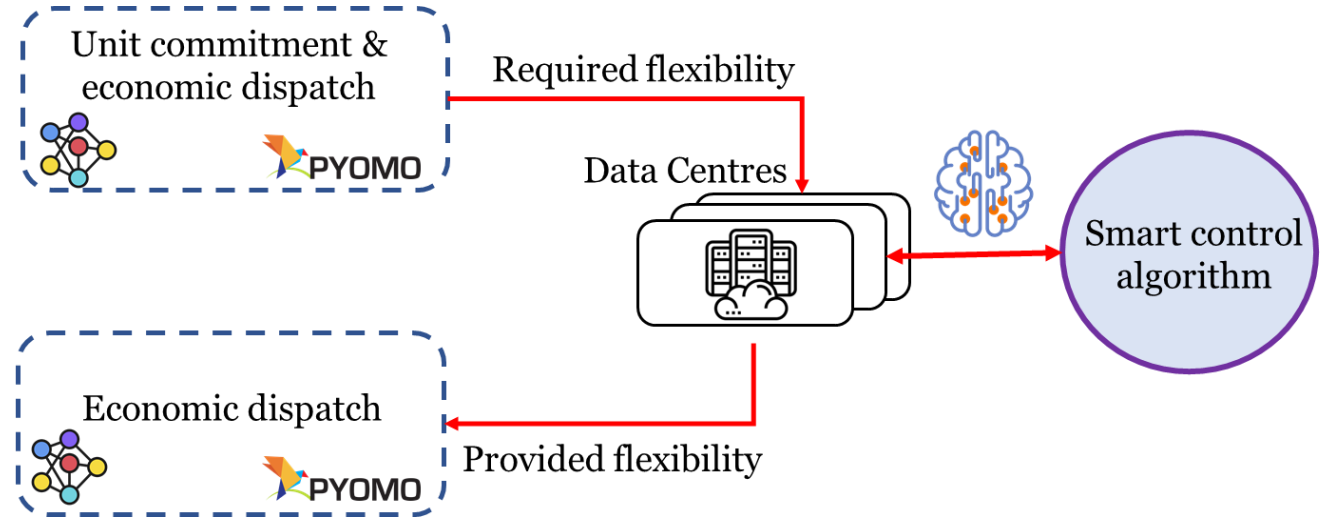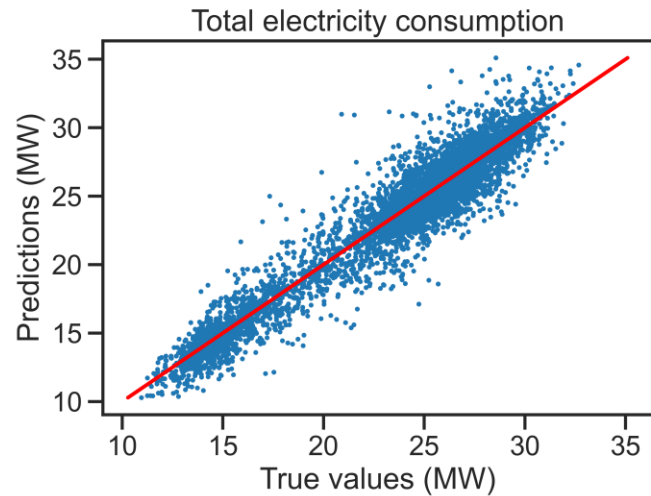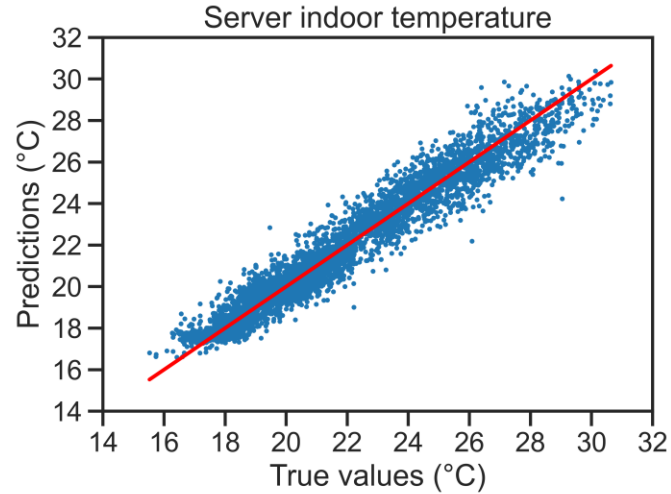
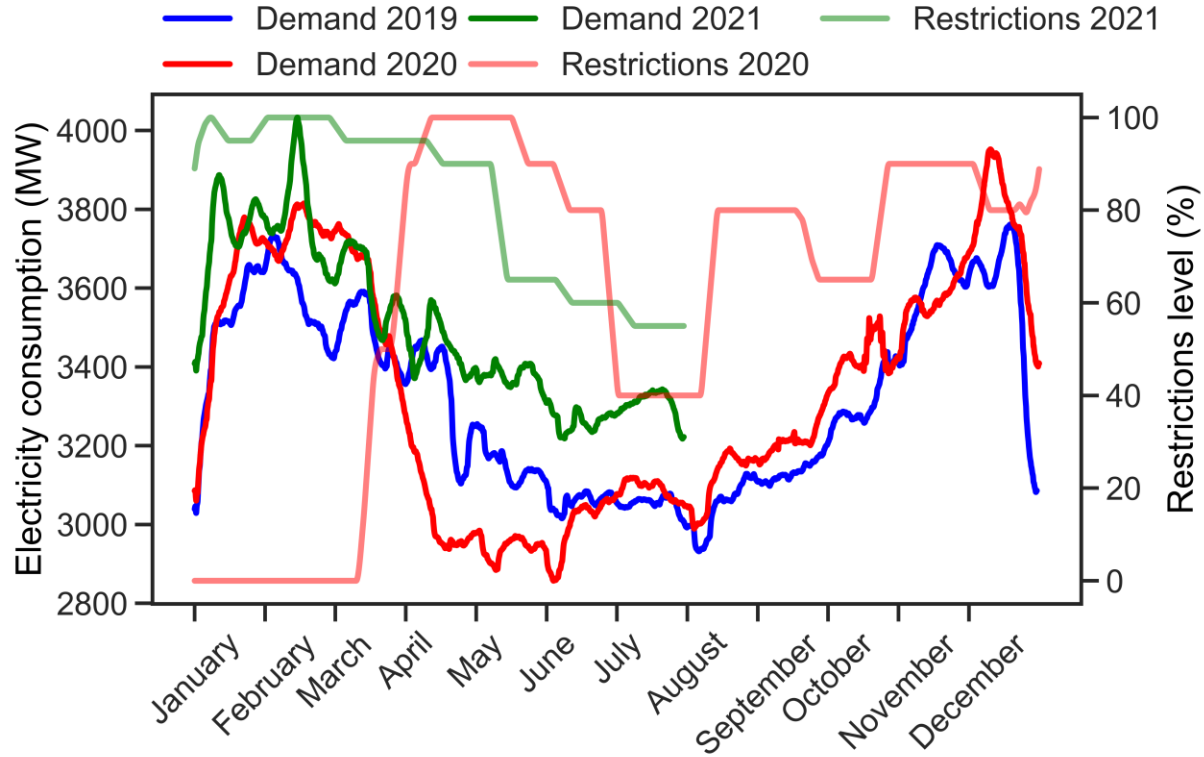# Let's put everything together

Some Results

Demand Prediciton- All Ireland
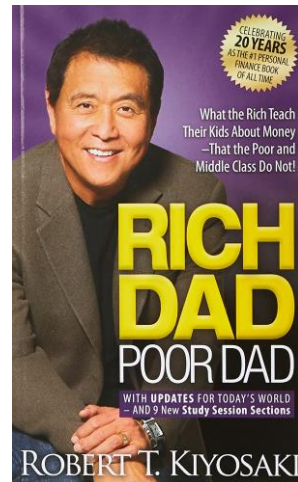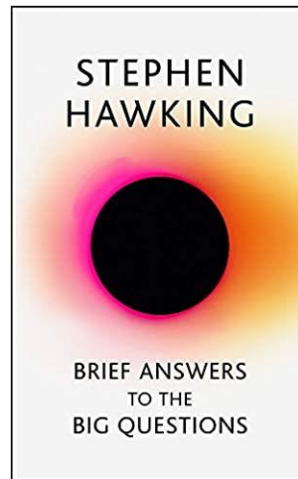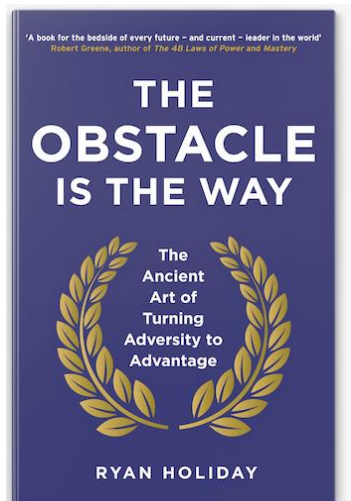
Output/ Generation:

Output/ Branch Flow:

Data Analysis

Data-driven analytics of human mobility and power system operation during COVID-19 and Brexit in Ireland
Negin Zarbakhsh, M. Saeed Misaghian, and Gavin McArdle

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Hobbies?

My Blog?

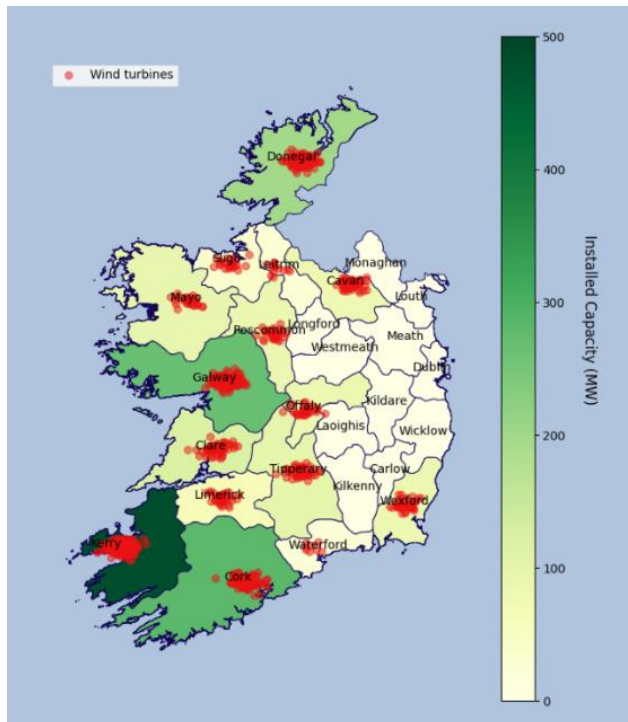UCD ENERGY INSTITUTE

https://s-misaghian.medium.com

Published in **Towards Data Science** · Mar 12 ★

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How passionate is Ireland when it comes to renewable energies?

Saeed Misaghian   Feb 23 · 6 min read ★

Middle transition towards renewable based energy systems, Poolbeg Dublin, Ireland (Photo credit: Fatemeh Naderifar, Sara Pejhan, and Saeed Misaghian)

Thank you for your attention…

Saeed Misaghian