

# Adam Kells

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## Summary

*I am a research Data Scientist specialising in applying machine learning to time series forecasting problems, currently working at London based causality startup causaLens. I previously completed my PhD in Biophysics from Kings College London where I contributed to 9 publications in 3 years. I have over 5 years experience in modelling and analysing complex problems, data and systems.*

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## Work Experience

### Data Scientist at causaLens

Mar 2019 – Present

- Implementing and developing state of the art methodology for causality in time series forecasting.
- Worked directly with multiple clients and converted high-value pilot client to full contract.
- Sourced, analysed and modelled data to generate use cases for company technology.

### Data Scientist at Polymatica

Mar 2019 – Sep 2019

- Analysed high street spending patterns to improve targeted advertising for a number of restaurant chains.
- Focusing on **data interpretation and visualisation** using Python.
- Contributing to the development of Polymatica product for automated data analysis.

### Tutorial Leader at Kings College London

Sep 2016 – Sep 2019

- Taught **physical chemistry** and **Linux** to undergraduates at KCL.
- Explained challenging quantitative concepts in introductory and advanced level courses.
- Wrote original **Jupyter notebooks** to teach Python programming.
- Nominated for **teaching excellence award** 2017-18.

### Researcher at University of Maryland

Jul 2018 – Sep 2018

- Worked on a short-term academic project with Professor Pratyush Tiwary at UMD.
  - Developed code and input files to automate the pipeline of performing biophysical simulations.
  - Performed large scale simulations on a supercomputer and wrote **bash scripts** to process the data efficiently.
  - Results of this project have been submitted for publication.
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## Education

### Kings College London

LONDON, UK

#### PhD in Biophysics

Sep 2016-Sep 2019

- Seven published peer reviewed papers on the topic of **Markov modelling** with two currently under review. Further details can be found on my [Google scholar](#) page.
- Improved efficiency of research group by developing several **Python** and **Matlab** codes to automate analysis processes.
- Implemented and developed **reinforcement learning** algorithms for accelerating simulations.
- **Collaborated** with Novartis Pharmaceuticals in Boston to perform analysis of newly developed drugs.
- Received **public speaking award** from doctoral training centre in 2017 and **outstanding contribution award** in 2019.

### Kings College London

LONDON, UK

#### MSc in Theoretical Modelling, Simulation and Data-Driven Analysis (Distinction)

2015-16

- Excelled in **machine learning**, **statistics**, **data visualisation** and **software development** coursework.
- Modelled the formation of sand dunes on Irish beaches using advanced **time series clustering** methods with real-world data.

### University College Dublin

DUBLIN, IRELAND

#### BSc in Theoretical Physics (1st Class Honours)

2011 – 2015

- Achieved exceptional exam results with a GPA of 4.05/4.2.
  - Academic Award 2014: Award for obtaining an A+ average in final exams.
  - Academic Award 2012: Award for highest exam results in field of Applied Mathematics.
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## Skills

### Programming Languages and Specialist Skills:

- Python:
  - Wrote, developed and maintained multiple libraries for analysing **big data** sets from computational chemistry simulations.
  - Experienced with packages such as **numpy, matplotlib, sklearn, pandas, tensorflow** and many more.
  - Experienced with **object oriented programming**.
- MATLAB: Wrote several repositories to generate data and analyse **time series** using Markov State models.
- Machine learning: Extensive knowledge of theory and application of many machine learning approaches. Including **neural networks, support vector machines, decision trees, linear/logistic regression** etc.
- SQL: Experienced in running database queries with **PostgreSQL**.
- Public speaking: Extensive experience in presenting data and results to both technical and non-technical audiences.
- Other technical skills include **LaTeX, Linux, Octave, Julia** and **R**

**Natural languages:** English (*mother tongue*), Spanish (*conversational proficiency*), Irish (*conversational proficiency*) German (*beginner*), and Mandarin Chinese (*beginner*).

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## Interests

- Karate:
  - Brown belt in Shotokan Karate.
  - Winner of bronze medal at British University Championships 2017.
  - President of KCL Karate Club 2017-18.
  - Treasurer of Shinboku Karate Organisation 2016-2018.
  - Awarded Half Colours for exceptional service to KCL Karate club.
- Trivia: Enjoy both competing in and writing questions for London table quizzes.