George Crowley

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Second-year PhD student within the school of Electronic and Electrical Engineering (EEE), and in collaboration with the EPSRC Centre for Doctoral Training in Water Infrastructure and Resilience. My research and interests lie at the intersection of complex systems modelling, computational methods and probability theory. My general ethos is to continue helping and inspiring others to better their understanding of Mathematics, especially within Engineering environments.

Education

2022 – Present PhD student (EEE)

My project is in collaboration with Thames Water, titled 'Machine Learning Methods for Monitoring of Complex water and Sewer Network Infrastructure'. I am under the supervision of Dr Iñaki Esnaola (EEE), Prof Simon Tait (CIVIL), Prof Vanessa Speight (CIVIL) and Prof George Panoutsos (EEE). This project is contained within the WIRe CDT, more information about the CDT can be found here.

Some brief highlights to date from this PhD includes:

- Developing computational tools to optimize sensor placement in urban drainage networks for state measurement estimation.
- Using tools such as SWMM to model complex urban drainage systems.
- Presentations to external collaborators showcasing results.
- Probability with measure module was taken. Grade achieved was 87%.

2019 - 2022 *BSc Mathematics, University of Sussex* - 1st class honors

My dissertation was titled "Numerical Methods for the Observational Model" and was supervised by Prof Anotida Madzvamuse (UBC), Dr James Van Yperen (University of Sussex) and Dr Eduard Campillo-Funollet (University of Lancaster). The dissertation can be found here.

Academic Achievements

In summer 2021, I was selected to participate in the (summer) **Sussex Junior Research Associate program** under the supervision of Prof Anotida Madzvamuse & Dr James Van Yperen. I explored using the finite difference and finite element methods for simulating curve shortening flow, where we considered different types of boundary conditions. An electronic poster of our work can be emailed out on request.

Employment History

2023 – 2024 GTA for ACS6106 (Cybersecurity for Control Systems)

- Participated in lab sessions helping students understand and spot complex modelling of DDOS attacks.
- Marking lab assignments for 40 students.

2023 – 2024 GTA for ACS232 (Systems, Signals and Communications)

- Redesigned tutorial questions and ran tutorial sessions with the module convenor.
- Exam marking for 120 students.

2022 – 2023 GTA for ACS232 (Systems, Signals and Communications)

- Solo graduate teaching assistant for ACS232. Responsibilities include preparing and running tutorial sessions for un-assessed work for up to 120 students across ACSE.

2022 – 2023 Dissertation support worker for MSc Statistics students

- Responsible for supporting MSc Statistics students to ensure their dissertations were legible, readable and of high enough quality.

2019 - 2022 *Southdown's Leisure – Fitness Advisor* (Part-time)

- Fitness Advisor for my local gym; activities include interacting with customers and explaining/demonstrating exercises whilst maintaining a COVID clean environment.

2017 – 2018 | 2014-2016 *Vodafone UK – Sales Advisor (Worthing's retail store - Full time)*

- Conducting day-to-day store operations which involved cashing up, stock counts, running the shop floor, and briefing team members on KPI's we needed to work on. There were over 26 different KPIs to be managed.
- Managed customer queries and complaints professionally, whilst also selling new contracts and upgrading contracts to existing customers.
- Passed the Vodafone Assistant Manager program which enabled me to be promoted to Assistant Manager should I have chosen to progress (2016), however, I opted to go traveling after this.

Hobbies and Interests

Spent several years travelling in Australia and New Zealand, predominantly residing within Sydney and Melbourne. I am an avid weightlifter enjoy reading in my spare time.