

Ryan Patrick Kelly

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Academic qualifications




- 2020 – current 📖 **Master of Philosophy (MPhil), Queensland University of Technology** in Computational Statistics
Anticipated Completion: January 2022
Thesis title: *Implementing Bayesian Synthetic Likelihood within the Engine for Likelihood-Free Inference*. More details in experience section.
Supervised by Professor Christopher Drovandi
- 2016 – 2020 📖 **Bachelor of IT / Bachelor of Mathematics, Queensland University of Technology.**
Computer Science Major, Statistics Major
Grade Point Average (GPA): 6.71
- March 2018 - July 2018 📖 **Exchange Semester, University of Vienna.**

Experience

- 2020 – current 📖 **MPhil Research.** This research is currently exploring and implementing Bayesian Synthetic Likelihood (BSL), a class of likelihood-free methods, in the software package, Engine for Likelihood-Free Inference. Programming skills applied include Python (NumPy, SciPy, matplotlib, Pytest), git, parallel computing and working in a Linux environment. Likelihood-free methods from ELFI will then be applied on a highly computationally-intensive, novel simulation model of cancer cell growth.
- 2020 – current 📖 **Research Assistant, Queensland University of Technology.** Helped develop a software package of GPU-accelerated multinomial and mixed logit estimation and a metaheuristic to find an optimal mixed logit model. Main tasks included developing additional features to estimate parameters for non-linear transformations, correlations between random parameters and improving the computation time of the metaheuristic.
- 2019 – 2020 📖 **Web Developer, Moreton Blue Software.** Full-stack developer using React, JavaScript and GraphQL to develop web apps as part of a small team. Applications were hosted on AWS with my work assisting with Elasticsearch, AWS Lambda, and AWS Amplify. Other tasks include writing custom data visualisations using D3 and unit tests with React Testing Library.
- 2019 📖 **Data Science Intern, Woodside Energy.** 6-week summer vacation program based in Perth. Worked in a small team on variable selection for different operating modes of the gas plant. Techniques included k-NN classification and LASSO.
- 2017 – 2018 📖 **Teaching Assistant, Code Camp.** Taught coding to kids aged 5-14.
- 2017 – 2018 📖 **Research Student, Queensland University of Technology.** Vacation research project, where I developed and applied Approximate Bayesian Computation with Independent Proposals for a g-and-k Model.
- 2017 📖 **Research Student, Queensland University of Technology.** Vacation research project partnered with Queensland Academy of Sport (QAS) where I identified individual performance-determining parameters in elite swimmers with segmented race analysis data using mixed linear models.




Scholarships and Awards

Awards and Achievements





- 2016 – 2019  **Dean's List For Excellent Academic Performance, Queensland University of Technology.**
Awarded in semesters 1 and 2, 2016. Semester 2, 2017. Semester 2, 2018. Semester 2, 2019.
- 2016  **Vice Chancellor's Scholarship (Academic), Queensland University of Technology.**
 **Dean's Scholars Program, Queensland University of Technology.**

Other

Skills

- Coding  **Proficient:** Python, R, JavaScript, C++ , \LaTeX
 **Familiar with:** C, C#, Java, MATLAB, SQL, GraphQL
- Languages  English, German (B2-C1), Norwegian (B2)

Volunteer Work and Extracurricular activities

- 2021  **Event officer, SEADS.** Organised events for the Science and Engineering Alumni of the Dean's Scholars program (SEADS).
- 2019  **Student Volunteer, SIGGRAPH Asia.** Helped with the 12th ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia.
- 2017-2018  **Peer Learning Facilitator, Queensland University of Technology.** Helped students from a number of disciplines understand maths and computer science concepts as part of a drop-in learning facilitator.
- 2016-2017  **Big Lift Member, Queensland University of Technology.** Community based projects (painting, cleaning and gardening) for rural and indigenous towns around south-east Queensland.

References

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