

# John Worrall

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Aspiring Mathematician with research interests in intersecting fields of dynamic systems, probability, and programming. Currently a 1st year PhD student at QUT applying computational statistical methods in a range of topics: **point process**, **variational inference**, **online/sequential** methods, **stochastic** processes, **distributed computation**, **probabilistic** and **approximating** techniques.

Over 13 years' industry experience in cleaning, storing, analysing and visualizing data for improved decisions making. With a focus on automating workflow and infrastructure to minimise cost and improve accuracy.

## Experience

**Principle Analyst** - Department of Transport Main Roads (DTMR). 11/18 - 6/20

Develop and deploy real time incident reporting application for traffic operators. Infrastructure as code with CI/CD pipelines on AWS platform for scalable backend and flexible frontend. Manage team and lead a piloted cloud project. (AWS, JS, Python, Postgres)

**Senior Analyst** - DTMR. 7/18 - 11/18

Deliver quality data analytics via develop models to provide high quality analysis of complex datasets and use a variety of geospatial, analytical and presentation tools. (Alteryx, AWS, Python, Tableau, Postgres)

**Analyst** - DTMR. 11/17 - 7/18

Modeling and visualization for decision making including road maintenance program. Winner of customer focus KPMG hackathon. (Alteryx, Python, Postgres, R, Tableau)

**Freelancer** - messanalytics.org. 1/16 - current

As a tutor communicate mathematical concepts clearly and concisely, addressing individual student strengths and weaknesses. (10-12 Math B, C, undergraduate Algebra & Calculus)

**Spatial Analyst** – DTMR. 1/12 - 11/17

Managing geospatial distributed customizable code, in-depth modeling and presentation on a number of projects. (Batch, C/C++, FME, Python, Powershell, SQL, VB)

**Spatial Scientist** DTMR. 1/07 - 11/12

Design and develop programs and scripts for automation, completion of graduate program. (Access Python, C/C++, SQL, VBA)

## Education

**PhD.** Student in Mathematics Sciences. QUT expected by 2023

**MSc. Mathematics** Applied. USQ, 2018

**BSc. Mathematics.** USQ, 2016

**BSc. Spatial Science** Hons. USQ, 2013

## Qualifications

AWS Developer associate certification, GISP-AP

## Publications

Worrall, John (2012), *Assessing Rockhampton City 2011 Flood Extents and Impacts using Remote Sensing and GIS*, USQ Research 2011. Spatial Science Symposium 2012.

Worrall, John (2018), *An ensemble-ANFIS and a hybrid SOM-ANFIS based model for stock market variable forecasting*, USQ Research 2018.

Worrall, John (2020), *Road incident and traffic monitoring in low latency environment for intelligent decision making*, ITS Asia Pacific Conference 2020, Brisbane, Australia. (Conference canceled, COVID-19)