

John Worrall

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Mathematical Statistical Modeler

Aspiring Mathematician with research interests in intersecting fields of dynamic systems, computational statistics and machine learning. Currently 1st year student at QUT school Mathematical Sciences covering a range of issues: **variational Bayesian inference, online learning, sequential statistics, stochastic optimisation and point processes.**

Experiences

Principle Analyst - Department of Transport and Main Roads. Brisbane, 11/18 - Current

Created real time incident reporting and passenger transport impacts application for traffic operators to decrease their assessment and response time. Develop pipelines and manage deployment on AWS platform including flexible backend & frontend. Manage team and successfully piloted cloud project. (Python, JS- React/D3/Deck.gl, Postgres-RDS, lambda, S3, Athena) <https://github.com/jaworra/Real-Time-Incident-Reporting>

Senior Analyst - DTMR. Brisbane, 07/18 - 11/18

Deliver quality data analysis which supports TMR's role in transport policy and planning. Develop models to provide high quality analysis of complex datasets and use a variety of geospatial, analytical and presentation tools to interrogate, analyses and report on data to inform transport policy, planning and system management. (Python, Alteryx, Tableau, AWS, Postgres)

Analyst - DTMR. Brisbane, 11/17 - 07/18

Modeling and visualization to ensure current and appropriate data is available for decision making, such as road maintenance program. Team winner of customer focus KPMG hackathon.(Alteryx, Tableau, Python, Postgres, R)

<https://github.com/jaworra/Hackathon-KPMG>

Freelancer – messanalytics.org. Independent, 01/16

Communicate mathematical concepts clearly and concisely, addressing individual student strengths and weaknesses, build academic self-confidence, encourage and meet goals. (10-12 Maths B,C, undergraduate Algebra & Calculus 1,2,3).

<https://messanalytics.org/services.html>

Spatial Analyst - DTMR. Brisbane, 01/12 - 11/17

Managing geospatial customisable code that is distributed regionally, in-depth modeling and presentation on a number of projects. (C#, PyQGIS, ArcPy, Mapbasic, PLSQL, FME, Batch, Powershell, LAStools)

Spatial Scientist - DTMR. Rockhampton, 01/07 - 11/12

Design and develop programs and scripts for automation, completion of graduate program. (Python, C#, Mapbasic, MsAccess, VBA)

Education

PhD Student in Computational Statistics and Applied Probability - expected to complete in 2023

Queensland University of Technology | School of Mathematical Sciences

MSc Applied Mathematics

University of Southern Queensland, 2018

BSc Mathematics

University of Southern Queensland, 2016

BSc Spatial Science, Hons

University of Southern Queensland, 2013

Awards

AWS Developer associate certification, KPMG hackathon winner 2018, GISP-AP (Geographic Information Systems Professional – Asia Pacific, President of Young Professional Queensland Regional committee.

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)