Ashley Wright
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I am an accomplished and highly organised Research Fellow with a PhD in flood forecasting and over 7 years of experience in delivering data driven insights using time series modeling techniques, statistical models, and algorithms.

KEY SKILLS

Story telling

- **End-user meetings** - I have been involved in research projects that have a significant focus on delivering research to end-users. To align strategic priorities with large government organisations and co-operative research centres, I have delivered presentations and reports to end-users who hold operational to director level positions. End-users are adopting recommendations and utilization pathways are in development.
- **Workshops** – Several flood mitigation strategies require adoption from community members. To assess stakeholder receptivity to flood mitigation options I ran several workshops and developed an interactive application. Participants left with improved understanding of flood mitigation measures and confidence that they could implement appropriate strategies.
- **Conference presentation** – To communicate research findings, develop insights, and identify potential barriers I have delivered or contributed to 20 conference presentations such as the American Geophysical Union conference in San Francisco.
- **Journal articles** – To advance existing literature I have published 4 articles, 3 as lead author, in top tier journals, such as Water Resources Research and been cited a total of 18 times. Further I have contributed to an upcoming book chapter on the Intersection of data science and sustainability; delivered and/or contributed to more than 10 research reports and 3 refereed conference articles.

Business Acumen

- **Strategic thinking** – To deliver valuable research in a limited time frame I have used critical thinking skills to identify research gaps which add value, identify barriers to success, gain the necessary knowledge required to overcome barriers, execute on research plans, and communicate key findings.
- **Business areas and interconnection** – Projects I have worked on have included multidisciplinary stakeholders from numerous organisations and business units. To deliver successful outcomes I have taken the time to understand competing priorities, pain points, and identify ways to add value to project outcomes.
- **Financial elements** – I have been involved in developing budgets for grant proposals, research hardware, and conference expenses.
- **Leadership -** By developing good relationships and breaking down communication barriers I have demonstrated good leadership skills and effectively led and managed 3 research assistants, supervised more than 8 honours students and organised and ran more than 5 workshop sessions.

Programming

- **Python** to develop deep learning neural networks such as LSTM and MLP for electricity demand forecasting.
- **MATLAB** for tasks which require significant matrix calculations, e.g. MCMC simulations, optimization using Bayesian inferencing, and data assimilation using the ensemble Kalman smoother.
- **R** for statistical analysis of weather and climatology data.
- **SQL** to query and/or manipulate geographic and drainage data sets.

Technologies

- **Git/GitHub** - I use this to manage project code over time.
- **High Performance Computing** - I have used the MASSIVE research cluster to run research code. This has involved scheduling batch jobs and profiling jobs to minimise resources uses.
- I am currently learning to use **Power BI** to develop dashboards and **AWS** to train deep learning networks.

Mathematics & Statistics

- In my Bachelor of Science, I majored in Applied Mathematics and Physics. Following on from my Bachelor of Engineering I undertook a PhD which focused on improving flood forecasting capability using time series modeling techniques. I am consistently using and developing these skills.

PROFESSIONAL CAREER

Monash University *Mar 2014 - Current*

Ranked 64th globally in the Times Higher Education World University Rankings 2021

Research Fellow - Flood Forecasting (Sep 2018 - Current)

Accountable for delivering methods to improve hydrological flood forecast skill using remote sensing data. I contribute to team efforts to improve flood forecasting capability at large Australian government organisations. On average floods cause damages of $377 million per year.

- Improved flood forecasting skill by developing superior methods to estimate rainfall. I achieved this by running Markov Chain Monte Carlo (MCMC) and data assimilation experiments on the MASSIVE high performance computing cluster.
- Engage with end-users and stakeholders to ensure research tasks are aligned with strategic priorities.
- Presented research on methodologies to optimise rainfall estimation techniques used in flood forecasts in USA.
- Collaborate with external agencies to incorporate models into a national water forecasting platform.
- Deliver flood forecasting model development guidelines to end-users.
- To demonstrate the capability of data driven models with process-based models to forecast floods. I am using the Long Short-Term Memory (LSTM) recurrent neural network (RNN).

Teaching Associate (Mar 2014 - Current)

Accountable for developing and delivering lectures, supervision of honours students, leading and managing team meetings, guiding tutors to respond to academic inquiries, and coordinating assignments and marking responsibilities.

Research Fellow - Flood Mitigation Strategy (Sep 2017 - Jan 2019)

Accountable for developing flood mitigation scenarios for Bogor's water sensitive transition. Our research team delivered roadmaps to aid the Indonesian city of Bogor in their transition to a water sensitive city.

- Organised workshop sessions and developed an application to assess stakeholder receptivity towards different flood mitigation options.
- Led and managed 3 research assistants.
- Presented on stakeholder receptivity to flood mitigation options in Italy.

EARLIER CAREER

Research Scientist	Metropolitan Fire Brigade	Feb 2016-May 2016
Civil Engineer	Breese Pitt Dixon	Jan 2012- Mar 2014

QUALIFICATIONS

Qualification	Institute	Majors	Awards/Medals	Dates
Doctor of Philosophy	Monash University	Hydrology	Eric Laurenson	Mar 2014-Sep 2017
Bachelor of Engineering	Monash University	Civil Engineering	First class honours	Mar 2007- Nov 2012
Bachelor of Science	Monash University	Maths & Physics		Mar 2007 - Nov 2010