Timothy **Hyndman**

DATA SCIENTIST

Melbourne, Australia

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Education

University of Melbourne	*Melbourne, Australia*
PH.D.	*2015-2019*

- Thesis titled 'The coupling time for the Ising heat-bath dynamics & efficient optimization for statistical inference'.
- Completed under the supervision of Prof. Peter Taylor, Prof. Aurore Delaigle, and Assoc. Prof. Tim Garoni.

Monash University	*Clayton, Australia*
B.SC.(HONS)	*2011-2014*

- Honours research project proved that a Markov chain with close ties to the Ising model (the 'worm chain') was rapidly mixing.
- GPA of 3.957, H1 honours result with an average mark of 93.

Australian Music Examinations Board	*Melbourne, Australia*
A.MUS.A (PIANO)	*2011*

Employment history

Biarri	*Windsor, Australia*
DATA SCIENTIST	*May. 2019 - Present*

- Technical lead on a project with one of Australia's major fuel retailers to suggest real-time fuel prices at over 500 stores. Starting with over 100GB of raw transaction data, I developed predictive models, for short term fuel volume forecasts at candidate prices, as well as predictive models for in store purchases and long term effects of difference pricing strategies. I was one of two developers for the final software, and helped deploy the solution to the client's Azure infrastructure. The solution is currently in a trial phase and being used at approximately 80 stores Australia wide.
- Developed tool to suggest 'optimal' markdown prices for a group of sport and outdoor retailers. The challenge was to suggest a price that would allow them to get rid of stock within an allocated time while maximising profit. After two trial implementations, the net increase in margin was measured at approximately $200k or 20%.
- Received feedback that we were 'the best value client we have ever had' by a large government organisation for my analytics work on one of their processing pipelines.
- I have also developed ranking algorithms for a competitor form of Poker, produced a performance analysis on a 3rd party's electricity forecasting algorithms, and determined factors that correlated with poor sales growth for an outdoor activities retailer.

Monash University	*Clayton, Australia*
RESEARCH ASSISTANT	*2019*

- Worked with Assoc. Prof. Tim Garoni on improving the results proved in my thesis. The outcome of this work, combined with the relevent parts from my thesis, is a working paper (detailed below).

University of Melbourne	*Melbourne, Australia*
TUTOR	*2016 - 2018*

- Tutored Linear Algebra (MAST10007)

Monash University	*Clayton, Australia*
TEACHING ASSOCIATE	*2013 - 2014*

- Tutored analysis of change (MTH1020) and differential geometry (MTH3110). Mentioned in student evaluations as one of the best parts of the differential geometry unit.

Monash University	*Clayton, Australia*
AMSI SUMMER RESEARCH SCHOLARSHIP	*2012-2013*

- Supervised by Prof. Kate Smith-Miles and Dr Davaatseren Baatar. Worked on optimising an instrument scheduler for Leica Microsystems.

Relevant Skills

- Proficient in Python, R, MATLAB, SQL, and TeX.
- Familiar with C++

- Experience using Docker, Docker Compose, and AWS (S3 and Athena)

Software

2018	**deconvolve**: Lead developer Provides tools for performing non-parametric deconvolution of measurement error problems
2017	**icon**: Author Embed SVG icons in R documents such as slides, reports and apps.
2017	**cricketdata**: Author International cricket data for men adn women, Tests, ODIs, and T20s.

Awards & Achievements

AWARDS

2020	Winner of the annual 'power of mathematics' award	*Biarri Optimisation*
2012-2014	Science dean's list fellowship award	*Monash University*
2011	Premier's VCE award for mathematics	*VCAA*
2010	Australian Student Prize	*VCAA*
2010	Australian Defence Force Long Tan Leadership and Teamwork award	*ADF*

SCHOLARSHIPS

2015	ACEMS top-up scholarship	*ACEMS*
2015	Australian Postgraduate Award	*Australian Government*
2014	Monash jubilee honours scholarship	*Monash University*
2011	Science merit scholarship	*Monash University*

COMPETITIONS

2017	Winner 'Advanced sampling & exploration competition'	*ACEMS*
2016	Special mention 'Advanced sampling & exploration competition'	*ACEMS*
2015	Winner 'Advanced sampling & exploration competition'	*ACEMS*

Publications

RESEARCH PAPERS

1. Collevecchio, A, TM Garoni, T Hyndman, and D Tokarev (2016). The Worm Process for the Ising Model is Rapidly Mixing. *J. Stat. Phys.* **164**(5), 1082–1102.
2. Collevecchio, A, TM Garoni, T Hyndman, and E Zhou (2018). *The coupling time for the Ising heat-bath dynamics*. Working Paper.
3. Delaigle, A, T Hyndman, and T Wang (2019). *deconvolve-package: Deconvolution tools for measurement error problems*. Working Paper.