Timothy Hyndman

Data Scientist

linkedin.com/in/timothy-hyndman
timothy.hyndman@gmail.com
timothyhyndman.com

About Me

I am a passionate data and machine learning expert with a PhD in probability and statistics. I thrive when rapidly learning new technologies and coming up with creative solutions for making complex technology easy to use.

Experience

Senior Statistician/Data Scientist
Predictive Analytics Group

January 2021 to present

- Lead developer, mathematician, and architect for a generalised sports schedule optimiser.
  - Continuously prototyped and tested new feature ideas, before implementing and deploying to the main product.
  - Improved the speed of the existing optimiser by a factor of over 500x.
  - Collaborated with backend, frontend, and design teams to build a web-app around the application.
  - Using novel generalisations of methods from academic literature, designed and implemented creative solutions that enabled non-technical users to specify diverse rules for sports schedules.
  - Provided direction for new feature development to senior management.
- Supervised, trained, and mentored junior staff, resulting in improved code quality and increased independence.
- Researched and orchestrated a collection of AWS services to automate registration data processing for a large sports organization.
- Used AWS SAM to define infrastructure as code and migrated old manually managed services to the new structure.

Data Scientist
Biarri

May 2019 to December 2020

- Researched, developed, and deployed machine learning (ML) models for many different clients.
- Technical lead on a project for a major Australian fuel retailer to recommend real-time fuel prices at over 500 stores.
  - Developed predictive models for short-term fuel volume forecasts, in-store purchases, and long-term effects of pricing strategies based on over 100GB of raw data.
  - Developed the final software and assisted in deploying the solution to the client's Azure infrastructure where it is now used Australia wide.
- Developed a tool to recommend optimal markdown prices for sports and outdoor retailers, resulting in a net increase in margin of approximately $200k or 20%.
- Received positive feedback from a large government organization for analytics work on their processing pipelines, being described as "the best value client we have ever had."
- Developed ranking algorithms for a competitive form of Poker, performed performance analysis on a 3rd party's electricity forecasting algorithms, identified factors correlating with poor sales growth for an outdoor activities retailer.
- Winner of the annual 'Power of Mathematics' award in 2020.

Research Assistant
Monash University

2019

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

Experience (cont.)

Tutor *2013 to 2018*
Monash University/The University of Melbourne
- Tutored linear algebra (MAST10007), analysis of change (MTH1020) and differential geometry (MTH3110). Mentioned in student evaluations as one of the best parts of the differential geometry unit.

Technical Skills

Programming: Python, R, SQL, HTML, CSS, C++, JavaScript, Bash, MATLAB
Libraries: Pandas, Numpy, SciPy, Numba, TensorFlow, Keras, PuLP, OpenCV, Scikit-learn, PySpark, NLTK
Tools and Technologies: Linux, Git, Docker, LaTeX, Airflow, MLflow, CI/CD pipelines, Jupyter notebook
Cloud: AWS (S3, Athena, Lambda, SAM, SageMaker, Quicksight), Confluence, Bitbucket, Gitlab, Github

Education History

Doctor of Philosophy in Probability and Statistics *2015 to 2019*
Institution: The University of Melbourne

- Recipient of Australian Postgraduate Award and ACEMS top-up scholarship.
- Winner of ACEMS Advanced sampling & exploration competition 2015 and 2017. Special mention 2016.

Bachelor of Science (Honours) in Mathematics *2011 to 2014*
Institution: Monash University

- H1 Honours with an average mark of 93. GPA of 3.957.
- Recipient of the Science Dean's List Fellowship in 2012, 2013, and 2014. Recipient of the Science Merit Scholarship. Recipient of the Monash Jubilee Honours Scholarship.

A. Mus. A (Piano) *2011*
Institution: Australian Music Examinations Board

Open Source R Packages

fable (Contributor) -Tidy time series forecasting
cricketdata (Author) - International cricket data for men and women, Tests, ODIs, and T20s
icons (Contributor) - Embed SVG icons in R documents such as slides, reports and apps
deconvolve (Lead developer) - Provides tools for performing non-parametric deconvolution of measurement error problems

Publications

- Collevecchio, A., Garoni, T. M., Hyndman, T., & Zhou, E. (2018). The coupling time for the Ising heat-bath dynamics [Working Paper].
- Collevecchio, A., Garoni, T. M., Hyndman, T., & Tokarev, D. (2016). The worm process for the Ising model is rapidly mixing. J. Stat. Phys., 164(5), 1082–1102.