

Adrian Wilkins-Caruana

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Adrian is an experienced machine learning researcher and practitioner. From MLOps to R&D, he brings industry and academic expertise to a broad range of data-driven projects.

Education

Ph.D. in Computer Science

University of Technology Sydney
Jan 2021 - present

Thesis: *Modelling Population-level treatment patterns in patient-level administrative health records*

B.Eng. in Mechatronic Engineering

University of Technology Sydney
Mar 2014 - Jul 2019

Thesis: *Hardware-implemented deep learning algorithms for quad-tree partitioning in HEVC*

Talks

2022: Department of Health, Australian Government. Title: *Abstract Pattern Recognition in Administrative Health Data*

2022: Australasian Joint Conference on Artificial Intelligence (Paper)

2021: Children's Cancer Research Unit, Westmead Hospital. Title: *Discovering Treatment Patterns in EHRs*

2018: Australasian Conference on Robotics & Automation (Paper)

Experience

Atlassian Corporation PLC | Machine Learning Scientist

Aug 2022 - present | Sydney, Australia

- As a part of Atlassian's core ML unit, I'm exploring ways to derive meaning from large-scale temporal data sequences. I also develop tooling for model development and productionisation.

Nearmap LTD | Machine Learning Engineer

Jan 2019 - Aug 2022 | Sydney, Australia

- Innovative contributions to: image encoding, neural network model architecture, data sampling strategy, and petabyte-scale ML model deployment & performance monitoring.
- Full-stack ML Engineer – wrote and reviewed code for labelling, modelling, evaluation, and production systems.

Freelance | Researcher, Lecturer, Writer

- **Unbox Research** [2022-]: I distil the latest ML research into easy-to-understand summaries. [You can read them here.](#)
- **University of Technology Sydney** [2021-2022]: Lecturing, tutoring, and admin for 32130 Fundamentals of Data Analytics.
- **Big Sand** [2021] is a sci-fi virtual band exploring new ways to interact with fans. I explored how NLP/chatbots fit into this goal.

Blackmagic Design PTY LTD | Research Engineer

Dec 2017 – Dec 2018 | Sydney, Australia

- Machine learning R&D for real-time FPGA-based video encoding for h.264/h.265 video codecs.
- Redeveloped existing heuristic-based algorithms with faster, more accurate neural network-based alternatives.
- Wrote and reviewed code for design and verification, developed automated system integration processes.

Publications

1. **A. Caruana**, M. Bandara, D. Catchpoole, and P. J. Kennedy. Beyond topics: Discovering latent healthcare objectives from event sequences. In *AI 2021: Advances in Artificial Intelligence*, pages 368–380. Springer International Publishing, 2022.
2. **A. Caruana** and T. Vidal-Calleja. Very low complexity convolutional neural network for generating quadtree structures. *Australasian Conference on Robotics and Automation*, 2018.