Alasdair Tran

CONTACT

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Github: github.com/alasdairtran

INTERESTS

Machine learning, natural language understanding, computational social science, graph neural networks, and computer vision.

EDUCATION

Australian National University *2017 – current*
PhD Candidate in Computer Science

- Member of the Computational Media Lab
- Advisors: Lexing Xie, Cheng Soon Ong, and Alex Mathews
- Topic: Sequence models with contextual knowledge

Australian National University *2010 – 2015*
Master of Actuarial Studies with Distinction
Bachelor of Science with First Class Honours in Computer Science

EMPLOYMENT

Mathspace *Feb 2017 – Jul 2017*
Software Engineer

- Work on the mathematics engine that does equivalence checks of math expressions.
- Develop algorithms to test students' knowledge with diagnostic tests.

NSW Office of State Revenue *May 2016 – Feb 2017*
Assistant Data Analyst

- Identify tax non-compliance cases using data mining and data matching.

Data to Decisions CRC *Feb 2016 – May 2016*
Graduate Data Scientist

- Use supervised learning to improve the efficiency of air conditioning systems.
- Develop a text-mining app to help a manufacturing company estimate project costs.

PUBLICATIONS

- **Alasdair Tran**, Alex Mathews, Cheng Soon Ong, Lexing Xie. "Radflow: A recurrent, aggregated, and decomposable model for networks of time series." *TheWebConf* (2021): to appear.
- Minjeong Shin, **Alasdair Tran**, Siqi Wu, Alexander Mathews, Rong Wang, Georgiana Lyall, Lexing Xie. "AttentionFlow: Visualising influence in networks of time series." *WSDM Demo* (2021): to appear.
- **Alasdair Tran**, Alex Mathews, Lexing Xie. "Transform and Tell: Entity-aware news image captioning." *CVPR* (2020). [paper] [demo] [code]
- **Alasdair Tran**, Cheng Soon Ong, Christian Wolf. "Combining active learning suggestions." *PeerJ Computer Science* 4 (2018): e157. [paper] [code]

Technical Skills

- Broad knowledge of machine learning:
  - Implementing end-to-end machine learning systems in PyTorch.
  - Designing and evaluating language models with AllenNLP and spaCy.
  - In-depth understanding of sequence models such as transformers.
- Experience in working with data:
  - Writing custom parsers in Python to scrape text data from online sources.
  - Designing schemas for NoSQL (MongoDB) and relational (PostgreSQL) databases.
  - Creating interactive data visualizations with D3.js.
- Full-stack development:
  - Development with React, GraphQL, and Django.
  - Setting up servers to serve real-time GPU inference requests with ZeroMQ.
  - App deployment with Docker, Kubernetes, and Google Cloud Platform.

Awards & Honours

AGRTP Stipend Scholarship *2017*
- *PhD scholarship from the Australian Government.*

National Security Big Data PhD Scholarship *2017*
- *PhD top-up scholarship from Data to Decisions CRC.*

AusDM Student Competition, First Place *2015*
- *For building a classifier to predict fire incidents in NSW.*

Boyapati Computer Science & Mathematics Prize *2012*
- *Awarded to students with the highest marks in second year.*

ANU Lions Oratory Competition Finalist *2012*
- *For my speech on how scientific thinking can help us solve moral questions.*

ANU International Undergraduate Scholarship *2010*
- *Awarded to the 5 most outstanding commencing students.*

Teaching Experience

Australian National University *2013 – 2018*
- Deliver weekly tutorial sessions, hold office hours, and mark students' assessments.
- Selected courses that I tutored:
  - COMP4620 Advanced Topics in Artificial Intelligence *2020*
  - COMP4650 Document Analysis *2018*
  - STAT7004 Introduction to Stochastic Processes *2017*
  - COMP2600 Formal Methods for Software Engineering *2015*
  - STAT2001 Introductory Mathematical Statistics *2015*
  - COMP3420 Advanced Databases and Data Mining *2014*

References

References are available upon request.