ELLIOTT VERCOE

linkedin.com/in/elliott-vercoe \diamond elliottvercoe.dev Sydney, Australia \diamond elliott.vercoe@gmail.com \diamond +61 430 283 543

ABOUT ME

I am a research software engineer and data scientist with a Master's in Information Technology (AI/Data Science) and over 6 years of professional experience. I blend a strong mathematical foundation with advanced software engineering skills to develop and implement machine learning solutions, bridging the gap between research and practical applications.

WORK EXPERIENCE

Truestate AI

Founding Machine Learning Engineer

- · Led development and deployment of large language models, focusing on batch applications and live inference workflows.
- · Designed and implemented our backend and ML platform using FastAPI microservices on Kubernetes.
- · Managed Kubernetes infrastructure on GCP, ensuring scalable and robust ML solutions.
- · Coordinated project management tasks, leading daily stand-ups and aligning team objectives. I was the first employee and we scaled the company to 6 employees.
- Technologies: Kubernetes, Hugging Face Transformers, Python, FastAPI, Next.js, PostgreSQL

CSIRO Data61 - Information Security and Privacy Research Group Research Software Engineer Sydney, Australia

- · Led development of a Scala application for managing re-identification risks in confidential datasets by applying cutting edge privacy techniques.
- · Supervised 2 student internships, fostering research and development.
- · Developed Differentially Private GANs using Pytorch, co-authoring a research paper.
- · Created Python libraries for privacy-preserving algorithms and contributed to Julia packages for power flow optimizations.
- · Technologies: Scala, Play Framework, Apache Spark, MongoDB, Docker, JavaScript, Pytorch

Performance Based Group - BECODE

Software Engineer

- · Developed a Django-based web application to assist engineers with fire safety standards in building design.
- Supervised a student internship, guiding project development.
- · Technologies: Python, Django, PostgreSQL

Performance Based Group - PBC

Fire Safety Design Engineer

- Authored fire engineering reports and coordinated with clients to implement optimal fire safety solutions.
- · Conducted Computational Fluid Dynamics (CFD) fire modeling.

2018-2019

Sydney, Australia

2020-2022

2017-2018

Sydney, Australia

2023-Present Sydney, Australia

EDUCATION

Master of Information Technology (AI/Data Science)

University of New South Wales (UNSW)

- $\cdot\,$ Graduated with Distinction; Overall WAM: 83
- · Capstone: Bidirectional Classifying Generative Adversarial Networks Mark: 92

Bachelor of Mechanical Engineering

University of New South Wales (UNSW)

- $\cdot\,$ Graduated with First Class Honours; Overall WAM: 84
- · Thesis: Low Energy Orbital Transfers Mark: 87

TECHNICAL SKILLS

Machine Learning: Python (Pandas, NumPy, Matplotlib, Pytorch, Scikit-learn), Hugging Face Transformers, Scala, Apache Spark, XGBoost

Backend Development: Python (Django, FastAPI), SQL, MongoDB, RESTful design

Infrastructure: Kubernetes, Google Cloud Platform (GCP), AWS, Docker, Linux (Ubuntu)

Frontend Development: HTML, CSS, JavaScript, React, Next.js

RESEARCH

- **Time Series Synthesis with Differentially Private GANs**, Ming Ding, Elliott Vercoe, David Smith, Thierry Rakotoarivelo, Djazia Ladjal, 2022. Delivered to client.
- Differentially Private Top-k Selection Algorithms, Raghav Bhaskar, Elliott Vercoe, David Smith, Thierry Rakotoarivelo, Djazia Ladjal, 2022. Delivered to client.
- Privacy-Preserving Power Flow Data Release, David Smith, Frederik Geth, Elliott Vercoe, Andrew Feutrill, Ming Ding, Jonathan Chan, James Foster, Thierry Rakotoarivelo, 2021. arXiv:2103.14036
- Multi-Resolution Differentially-Private Data Model, Farhad Farokhi, Thierry Rakotoarivelo, Ming Ding, Paul Tyler, Elliott Vercoe, 2020. Data.gov.au
- BiCGAN: Bidirectional Classifying GANs, 2019. Projects Page

OTHER ACTIVITIES

UNSW Outdoors Club Trip Leader

• Teach climbing, canyoning, and hiking skills; lead and manage trips and events.

Remote Area First Aid Training

• Completed advanced first aid training for remote locations.

2018-2019 Sydney, Australia

Sydney, Australia

2021

2016-Present

2013-2016