RAJITH VIDANAARACHCHI

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Personal Statement

Data and AI professional with a PhD in machine learning and a strong foundation in data science and statistical modelling. I design and deliver intelligent, data-driven workflows and decision-support tools that integrate automation, forecasting, and advanced analytics. My work spans research on cutting-edge AI and neural network architectures, as well as applied consulting projects that transform complex datasets into actionable insights and scalable, real-world solutions. Skilled in Python, SQL, and R, I bring extensive hands-on experience across research, government, and applied analytics contexts. I develop independent end-to-end workflows as well as deployable solutions on platforms such as Replit and Azure, creating AI systems that enhance forecasting accuracy, decision-making, efficiency, and measurable outcomes.

Key Skills

AI Systems & Workflow Design
Experience developing intelligent, data-driven workflows that integrate automation, forecasting, and model-based decision support. Skilled in building and deploying AI solutions that translate complex data into actionable insights for enterprise and research contexts.

Data Analysis & Forecasting
Proven ability to extract, model, and interpret complex datasets to produce accurate forecasts and evidence-based insights. Skilled in time-series analysis, regression, and simulation modelling for performance and policy evaluation.

Consulting & Solution Delivery
Proven ability to translate complex AI and data science concepts into practical, value-focused solutions. Experienced in delivering tailored workflows and forecasting models that drive measurable outcomes. Skilled at bridging technical development and strategic decision-making across enterprise, government, and research contexts.

Machine Learning & Neural Networks
Strong foundation in data science and statistical modelling. Research and applied experience in neural network architectures, predictive modelling, pattern recognition, and forecasting.

Programming & Technical Proficiency
Advanced proficiency in Python (pandas, NumPy, scikit-learn, PyTorch), SQL, and R. Skilled in designing end-to-end pipelines, automating data processes, and deploying solutions.

Leadership and Mentoring
Demonstrated capability in coordinating interdisciplinary teams. Lead researcher and co-investigator on multi-institutional AI projects, fostering innovation and knowledge exchange across data science and engineering domains. Mentor for PhD Students working on cutting-edge research at the University of Melbourne and the Australian National University.

Education

PhD Engineering and Computer Science 2017 – 2021 | Canberra, Australia
The Australian National University
Pattern Recognition for Complex Heterogeneous Time-Series Data

BSc. Hons Computer Science and Engineering 2011 – 2016 | Sri Lanka
The University of Moratuwa

Professional Experience

Quantuma 07/2025 – Present | Toronto, Canada (Remote)

AI Consultant

- Consulting to a successful AI startup on advanced AI systems and the integration of **agentic AI workflows** into production-grade solutions.
- Design and prototype intelligent automation tools and decision-support pipelines combining **machine learning, forecasting**, and natural-language reasoning.
- Advise on **AI architecture, orchestration, and deployment** to enhance scalability and responsiveness of applied solutions.
- Contribute to an agile, experimental environment focused on translating **cutting-edge research into practical, high-impact products**.

The University of Melbourne 2022 – present | Melbourne, Australia

Research Fellow / Lecturer

- Lead and collaborate on projects applying **AI, LLMs, agent-based modelling, and data science** to complex social and spatial systems, incorporating quantitative and qualitative data.
- Conduct research on **neural network architectures**, **automation**, and the integration of **ethical and explainable AI** into real-world contexts.
- Design and implement **predictive and simulation-based workflows** to support evidence-based decision-making for research and government partners.
- Lecturing, Subject Coordinating, and Developing teaching material for *AI for Engineering* and *Numerical Methods for Engineers.*
- **Key Achievement:**
  - Developed advanced analytics methodologies for clients (under tender), including **WorkSafe Victoria** and **TAC Victoria**, enabling data-driven performance insights.
  - Built a participatory AI model exploring **housing, health, and spatial dynamics**, integrating behavioural simulation with predictive analytics.

The University of New England 2021 – 2022 | Armidale, Australia

Senior Technical Officer

- Delivered **predictive modelling and simulation frameworks** to support national COVID-19 response and public health policy.
- Collaborated with interdisciplinary health and policy teams to translate complex data into **actionable insights** for decision-makers.
- Presented analytical outputs to senior stakeholders, driving evidence-based interventions at local and national levels.

Key Achievement:

- Played a key technical role in Australia's pandemic response through rapid, high-impact **AI-driven modelling** and data analytics.

The Australian National University 2017 – 2018 | Canberra, Australia

Casual Academic/Professional

Tutor for *Engineering Data Analytics* and *Foundations of Computing.* Data Analyst for the Research School of Humanities & the Arts

The University of Moratuwa 2015 – 2016 | Moratuwa, Sri Lanka

Casual Academic

Tutor for *Computer Networks, Machine Learning,* and, *Communication Skills.*

Languages

English • Spanish • Sinhala