

# Arun Krishnasamy

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## EDUCATION

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### Monash University

*Master of Business Analytics*

Melbourne, VIC

*Feb 2024 - Dec 2025*

### Vaigai College of Engineering

*Bachelors in Mechanical Engineering*

Madurai, India

*Aug 2019 - Apr 2023*

## TECHNICAL PROJECTS

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### Melbourne Transit Policy Causal Impact Analysis | Independent Project (In Progress) Apr 2026 – Present

- Engineering a high-performance data pipeline to ingest, clean, and aggregate over **48 million rows** of Victorian Government TIRTL traffic sensor data, utilizing memory-optimized typing and Parquet compression.
- Conducting rigorous spatial and temporal EDA to validate sensor network reliability, engineering custom regressors to dynamically control for school holidays, public holidays, and directional commute flows.

### Department of Treasury and Finance | Analyst Victorian Government

Jun 2025 - Oct 2025

- Designed a reproducible, mixed-frequency data ingestion pipeline in Python and R (targets), harmonizing **16,000+ time-series observations across 120+ regional indicators**.
- Implemented a robust 28-parameter schema registry to automate data transformation, missingness diagnostics, and quarterisation rules, demonstrating strong data governance and pipeline scalability.
- Prototyped a Bayesian VAR (MF-BVAR) model using PyMC and PyTensor, treating quarterly indicators as latent monthly states to improve the accuracy of real-time economic nowcasts.

### Predicting the Probability of Death in an ICU (MIMIC-III)

May 2025

- Engineered an end-to-end predictive pipeline in R (tidymodels), processing over 650,000 diagnostic records across **14,500+** unique ICD-9 medical codes.
- Transformed high-dimensional categorical health data into numerical features using GloVe embeddings and comorbidity scores, successfully handling complex, sparse matrices at scale.
- Trained an ensemble machine learning model (Neural Networks, XGBoost, Random Forest) to predict patient mortality, achieving a **95% ROC-AUC** and ranking 7th on the public leaderboard.

## PROFESSIONAL EXPERIENCE

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### Elegant Media

*Business Analyst – Internship*

Melbourne, VIC

*Dec 2025 – Mar 2026*

- Translated complex business workflows into detailed functional requirement documents and wireframes, bridging the gap between client needs and technical execution.
- Executed rigorous unit testing on mobile app builds, synthesizing technical findings into comprehensive test reports to ensure product quality prior to launch.

### Woolworths Customer Fulfilment Centre

*Online Team Member*

Melbourne, VIC

*July 2024 – Present*

- Consistently exceed strict volume KPIs in a fast-paced environment, executing rapid-dispatch protocols to process 50+ product totes per session.
- Demonstrate strong adaptability and teamwork by dynamically reallocating across dispatch and produce departments to manage volume surges and ensure on-time delivery handovers.

## TECHNICAL SKILLS

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**Programming Languages:** Python, R, SQL, Excel

**Data Engineering & Wrangling:** Data cleaning, transformation, preprocessing, and feature engineering

**Machine & Deep Learning:** Neural Networks, supervised/unsupervised learning, CNN, RNN, Bayesian inference, hypothesis testing

**Libraries & Frameworks:** pytorch, keras, pandas, numPy, sci-kit learn, tidymodels

**Data Visualization:** Tableau, Power BI, ggplot2, matplotlib, R shiny

**Tools & Version Control:** Git, GitHub, Vim

## CERTIFICATIONS

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**Google Advanced Data Analytics Professional Certificate**

2024

**Google Data Analytics**

2023