Aayush Bajaj

DATA ANALYST

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Education

University of New South Wales	*Sydney, Australia*
Master of Statistics	*Feb 2026 – Dec 2028*
University of New South Wales	*Sydney, Australia*
Bachelor of Computer Science (AI), Minor Mathematics	*Feb 2021 – Sept 2025*

Skills

Statistical Analysis: Hypothesis Testing, Regression, Time Series, Experimental Design, A/B Testing, Bayesian Methods

Data Engineering: SQL, PostgreSQL, ETL Pipelines, Data Warehousing, Azure SQL, pgvector

Analytics & Visualisation: Python, Pandas, NumPy, Matplotlib, Seaborn, Statistical Modeling, Data Cleaning

Cloud & Infrastructure: Azure, Docker, RESTful APIs, Data Pipeline Orchestration

Development Tools: Git, Jupyter, Linux/Shell, Version Control, Automated Testing

Projects

Biomedical Semantic Segmentation ⬈   *Oct 2024 – June 2025*

Production-grade kidney and tumour segmentation from 3D CT scans achieving top-tier performance on KiTS19 leaderboard.

- Implemented and compared 2D/3D state-of-the-art architectures; achieved class-leading Dice score of 78% (full marks).
- Reproduced nnU-Net end-to-end on Nvidia H200/A200; published technical report with ablation studies.
- Deployed to KiTS19 official leaderboard: ranked #57 globally with Dice score of 0.9129 through systematic hyperparameter optimisation.

Dead Tree Segmentation ⬈   *Kaggle*

Semantic segmentation of live/dead trees from satellite imagery with severe class imbalance.

- Implemented U-Net from scratch (31M parameters); combined Dice + Focal loss for 97% class imbalance.
- Achieved 0.71 IoU after morphological post-processing; parallelized training on CUDA-enabled HPC.

10,000 Hours Analytics ⬈   *Aug 2024 – present*

Portfolio of statistical analysis and data science notebooks covering regression, classification, and EDA.

- Comprehensive Jupyter notebooks for supervised/unsupervised learning with statistical rigor.
- Version-controlled experiments demonstrating data preprocessing, feature engineering, and model validation.

ABAJ.AI Infrastructure ⬈   *May 2023 – present*

Technical blog and knowledge-sharing platform with 1,073+ ML/AI research notes and tutorials.

- Automated publishing pipeline built with Hugo; deployed behind Nginx with HTTPS.
- Comprehensive ML documentation following Zettelkasten methodology for knowledge graphs.

Experience

Technical Consultant	*Sydney, NSW*
Freelance	*2024 – present*

- Deployed data infrastructure and analytics pipelines for client web applications.
- Configured database systems, ETL workflows, and monitoring dashboards for production environments.

Certifications

AWS Certified Machine Learning – Specialty

Microsoft Certified: Azure AI Engineer Associate (AI-102)