

Bhanuprakash Bhat

Postgrad Student in Data Science and AI, The University of Sydney

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 Portfolio (My works)

PROFILE

Data Scientist & Master's candidate at USYD who builds deployable AI, not just models. I architected a Serverless GCP Agent automating 100% of email triage (projecting ~\$10.6k savings) and specialize in developing RAG solutions for complex information retrieval. My work includes deploying real-time ML pipelines using FastAPI and Docker, strictly adhering to MLOps best practices like artifact storage and environment isolation. I bridge the gap between raw data and production, transforming experimental notebooks into reliable, stakeholder-ready systems.

EDUCATION

Master of Technology in Data Science and Artificial Intelligence

07/2024 – 06/2026 | Sydney, Australia

The University of Sydney

Bachelor of Technology in Aerospace Engineering

08/2020 – 06/2024 | Bengaluru, India

M S Ramaiah University of Applied Sciences

SKILLS

Programming: Python, R, Java, SQL, PostGreSQL, MySQL, Next Js

Data Analysis & Visualization: Power BI (DAX, Power Query), Excel (Pivot Tables, Power Pivot), SQL (Joins, Subqueries, Window Functions), Python libraries (Seaborn, Matplotlib)

Machine Learning & AI Frameworks: Scikit-learn, TensorFlow, PyTorch, Keras, OpenCV, XGBoost, LightGBM, LangChain, LangGraph, Huggingface, RAG solutions, Vector database

Software & Platforms: Jupyter Notebooks, Google Colab, Git, GitHub, VS Code, MATLAB Simulink

COURSES

Database Management Systems, Machine Learning Specialization , Principal of Data Science, Statistical Modelling and Probability, Data Mining, Data Engineering, Data Structures and Algorithms, Data Analysis, Object Oriented Programming, Project Management, Professional Practice in IT,

PROFESSIONAL EXPERIENCE

Assessment and AI Transition Assistant

05/2025 – present | Sydney, Australia

The University of Sydney

- Collaborate with Educational Designers and Unit Coordinators to maintain and optimize assessment data in the Sydney Curriculum system.
- Use **akari cloud systems** to automate data validation, consistency checks, and updates across unit outlines.
- Evaluate course content to identify **AI integration opportunities** that improve learning and teaching outcomes.
- Conduct **quality assurance and feature testing** for curriculum systems, ensuring compliance with university standards and policies.
- Stay current with **AI in education**, assessment design, and institutional technology practices.

David Jones Australia

10/2024 – 08/2025 | Sydney, Australia

Sales Assistant

- Delivered exceptional customer service by understanding client needs and providing tailored product recommendations, contributing to a consistently high Net Promoter Score (NPS).

- Collaborated with cross-functional teams to streamline visual merchandising and store layout strategies, resulting in improved customer flow and sales conversions.
- Contributed to retail performance reporting by gathering key sales metrics, helping the team optimize sales strategies aligned with customer behavior analytics.

Moog Inc

01/2024 – 05/2024 | Bengaluru, India

Data Analyst Intern

- Designed and deployed dynamic Power BI dashboards to visualize critical sensor data (pressure, temperature, and density), enabling engineers and managers to track real-time trends and optimize system performance.
- Processed and cleaned large datasets using Pandas and NumPy, ensuring high data integrity before feeding into visualization pipelines and statistical analysis.
- Conducted exploratory data analysis (EDA) using Matplotlib and Seaborn to uncover hidden insights in system behavior, supporting early detection of anomalies in aerospace components.

PROJECTS

Serverless Autonomous AI Agent for Operational Triage on Google Cloud Platform

- Architected a Serverless Pipeline:** Designed and deployed a containerized Python application on **Google Cloud Run (Jobs)**, utilizing **Docker** for cross-platform reproducibility and eliminating idle compute costs through scheduled execution.
- AI-Driven Process Automation:** Integrated **OpenAI (GPT-4o)** to perform semantic analysis on real-time email streams (IMAP), successfully classifying urgency and routing actionable alerts to **Slack** via Webhooks with near-instant latency.
- Business Impact & ROI:** Automated 100% of the manual email triage process, projecting a reduction in context-switching costs equivalent to **~\$10,600 in reclaimed annual productivity per employee..**

Electricity Sector Data Integration & Spatial Analysis using DuckDB

- Built an end-to-end data engineering pipeline to integrate national electricity, emissions, and ABS regional datasets.
- Performed data cleaning, augmentation, and geocoding to validate facility coordinates and handle missing or malformed geographic data.
- Designed and implemented a spatial database schema in DuckDB with normalized staging tables and a denormalized analytical mart supporting geometry types.

RetailBoost: Intelligent Store Sales Forecasting with Explainable Machine Learning and Streamlit

- Developed a full-stack ML solution to forecast daily retail store sales using Random Forests, SHAP for model explainability, and an interactive Streamlit dashboard.
- Engineered time-series-aware features (date parts, promotions, oil prices, transactions) and compared models (Linear Regression, Gradient Boosting, Random Forest) based on MAE, RMSE, and R².
- Uniquely combined interpretable AI (SHAP force plots) with a real-time dashboard UI—making the model insights accessible even to non-technical users.

ASX Real-time Stock Signal Prediction System (FastAPI + TensorFlow + Streamlit)

- Designed and implemented an end-to-end ML pipeline for real-time financial signal prediction
- Built feature engineering module (technical indicators: SMA, EMA, RSI, MACD, Bollinger Bands, log returns)
- Trained a deep learning model (TensorFlow CNN1D) for stock movement prediction
- Developed a FastAPI backend to serve ML predictions as REST endpoints (/predict, /health, /history).
- Integrated live market data sources (Yahoo Finance, Alpha Vantage, Stooq)
- Applied MLOps best practices: model artifact storage, configuration files, modular code, and environment isolation

PUBLICATIONS

Three-Dimensional Computational Study over a Hyper-Ballistic missile body at Hypersonic Mach numbers

ISSW-34, Daegu, South Korea

14/07/2023

CERTIFICATES

Python for Data Analytics
Besant Technologies, 2024

Data Analysis using Excel
Besant Technologies, 2024

Professional Practise in Power Bi
Besant Technologies, 2024