

Abhinava Sai Bugudi

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Profile

Data Scientist with a First Class Honours degree in Software Engineering and hands-on experience across predictive modeling, time-series forecasting, NLP, and computer vision. Skilled in Python, R, SQL, and cloud-native pipelines, with a proven record of delivering measurable impact: from achieving 85% FX forecasting accuracy in FinTech to driving a 15% uplift in CTR in e-commerce. Strong foundation in statistics, experiment design, and the end-to-end ML lifecycle, from data preprocessing and feature engineering to deployment and stakeholder communication.

Education

BEng Software Engineering, 1st Class Honours

University of Westminster, London

Sep 2022 – Jul 2025

- Relevant Modules: Statistical Modelling, Big Data Analytics, Machine Learning, AI Ethics, Advanced Algorithms, Cloud Computing.
- A-Levels (Harris Science Academy): Mathematics, Computer Science, Physics, Chemistry.

Experience and Projects

AI Developer Intern

BuzNear (Sanspro Technologies, 30-person startup)

Jun 2024 – Sep 2024

- Conducted **EDA on 750,000+ user interactions** to identify behavioral patterns and predictive signals.
- Fine-tuned a 12-layer BERT recommendation model; validated uplift with live A/B test, achieving a **15% CTR increase**.
- Built NLP microservice to summarise **70,000+ product descriptions**, reducing merchandising workload by 40%.
- Wrote complex **SQL queries** and developed Power BI dashboards to communicate insights to product managers.
- Collaborated in Agile sprints using GitHub and Jira; contributed to production deployments and cross-functional reviews.

Deep Learning Project (Final Year Project)

Voxscribe – Handwriting Recognition App

Oct 2024 – May 2025

- Executed the full ML pipeline for handwriting recognition, from **data cleaning and preprocessing** of the **130,000+ EMNIST images** to model deployment on mobile.
- Conducted **exploratory data analysis (EDA)** and applied **data augmentation** techniques (rotation, scaling, normalization) to improve model generalization.
- Designed and trained a custom **Convolutional Neural Network (CNN)** in TensorFlow for supervised learning, achieving **90% validation accuracy**.
- Applied **cross-validation**, monitored performance with **confusion matrices**, and optimized precision, recall, and F1-score to ensure balanced accuracy.
- Performed **hyperparameter tuning** (learning rate schedules, batch size, dropout regularization) and optimized the model for production efficiency.
- Converted the final model to **TensorFlow Lite (TFLite)**, achieving a **75% reduction in size** and **600ms inference latency** on Android devices.
- Built an Android front-end (Kotlin/Jetpack Compose) with features for real-time prediction, Top-3 suggestion ranking, and export to **PDF/TXT/DOCX**.

- Deployed a scalable **Flask API backend** on Render cloud with asynchronous request handling; implemented version control for model reproducibility.
- Documented results, evaluated trade-offs between accuracy and latency, and communicated findings in a technical report with visualizations and error analysis.

Data Science Project Lead

VolvoxForex (Independent FinTech Project)

Jan 2023 – Present

- Architected and deployed a live FX forecasting platform with **150+ active users**: volvoxforex.online.
- Engineered serverless AWS pipeline (Lambda, S3, ECS) ingesting **2GB+ of financial and sentiment data daily**.
- Performed **feature engineering** with 50+ predictive variables (lags, technical indicators, sentiment).
- Trained and backtested LSTM models over 5 years of historical data, achieving **85% directional accuracy**.
- Developed Flask API backend and React dashboard to deliver real-time forecasts and visual analytics.
- Optimized latency with caching, async APIs, and load-balanced architecture for scalability.

Robotics Maze Pathfinder

University Robotics Society

Jan 2023 – Jul 2023

- Designed Q-learning agent in Python for dynamic maze navigation; achieved **99% completion rate**, outperforming A* by 30%.
- Tuned **reward matrices and epsilon-greedy exploration strategies** to optimize policy learning.
- Integrated RL logic with Arduino hardware and OpenCV-based vision system.
- Led a team of peers; documented algorithms and presented results in internal showcases.

Skills

Data Science & Analytics: Statistical Modeling, Predictive Analytics, A/B Testing, Hypothesis Testing, Feature Engineering, EDA

Machine Learning: Time-Series Forecasting (LSTM), NLP (Transformers, BERT), Computer Vision (CNNs), Recommender Systems, Reinforcement Learning

Programming & Tools: Python (Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Matplotlib), R, SQL, Java

Cloud & MLOps: AWS (Lambda, S3, ECS), Azure, GCP, Docker, CI/CD, Git

BI & Communication: Power BI, Tableau, SAS, Data Storytelling

Certifications

- Google Cloud Professional Machine Learning Engineer
- Microsoft Certified: Azure AI Fundamentals (AI-900), Azure Fundamentals (AZ-900)
- SAS Academic Specialisation in Big Data Analytics and Business Intelligence
- DeepLearning.AI – NLP with Transformers
- Advanced Course in Data Science with Python and R (Datahill Solutions)