Agam Singh Saini

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Education

Masters in Data Science and Innovation (GPA 3.5/4) — Sydney, Australia
University of Technology Sydney — *Feb 2025 – Present*

B.E. in Mechatronics Engineering (CGPA: 8.77) — Patiala, India
Thapar Institute of Engineering and Technology — *Mar 2020 – Jun 2024*

Work Experience

Robotics Engineering R&D Intern — Jan 2023 – Jun 2023
CVRDE DRDO — *Chennai, India*
- Architected autonomous computer vision pipelines using ROS2, deploying real-time person detection and obstacle avoidance algorithms, increasing navigation safety by 40%.
- Collaborated with senior scientists to validate autonomous behavior across 50+ simulation hours in Gazebo, presenting technical findings that guided prototype iterations.

Mechatronics Engineering Intern — Jun 2023 – Aug 2023
Spectrum Technology — *Ambala, India*
- Spearheaded creation of IoT data acquisition systems using LabVIEW, enabling sub-second monitoring of 50+ industrial sensors.
- Constructed intelligent alert mechanisms processing continuous streams with 99.9% reliability, and authored detailed technical documentation to facilitate seamless knowledge transfer to future teams.

Support Worker (Part-Time) — Apr 2025 – Present
Informed Care Services — *Australia*
- Demonstrate exceptional communication skills by proactively liaising between clients, families, and healthcare providers to ensure holistic care delivery and maintain high-fidelity progress documentation.

Projects

Safarnama (NSW Transit Intelligence Platform) | *Live App Link* — Nov 2025
- Designed a high-throughput **real-time data ingestion pipeline** consuming GTFS-Realtime (Protobuf) feeds, processing 10,000+ vehicle updates with sub-second latency.
- Programmed **geospatial analytics logic** to visualize dynamic transit entities on OpenStreetMap, filtering signal noise to reduce user commute planning time by approx. 25%.
- Unified disparate datasets—static schedules, real-time telemetry, and live occupancy sensors—into a cohesive data model to solve multi-modal "first-mile/last-mile" routing challenges.

Bitcoin Price Prediction System | *GitHub* | *Live Demo* — Nov 2025
- Orchestrated an end-to-end crypto analytics platform using **FastAPI** and **Streamlit**, integrating live market data from Kraken/CoinGecko APIs.
- Trained advanced ensemble models (**XGBoost, LightGBM, CatBoost**) on 10 years of OHLCV data, achieving a **79.6% R^2 score** for next-day high price forecasting.
- Established production-grade MLOps via Docker containerization, ensuring 99% system uptime through proactive health monitoring and fallback mechanisms.

NYC Taxi Big Data Analytics & ML | *GitHub Link* — Nov 2024
- Directed a scalable data pipeline on **Databricks** processing **1 Billion taxi records**, applying ETL logic to cleanse 80M+ erroneous entries.
- Generated fare prediction models achieving **87% R^2 accuracy**, utilizing high-cardinality feature engineering to minimize error margins to under $8.
- Executed complex SQL analytics to derive actionable business insights regarding trip patterns and revenue optimization strategies.

DoomBuoy Python Package | *PyPI/GitHub* — Nov 2025
- Authored and published a custom Python package for accelerated data preprocessing and ML workflows.
- Structured modular utilities for feature engineering and visualization, slashing code redundancy by 50% in experimental data science workflows.

Technical Skills

Languages: Python, SQL, C++, C, Dart (Flutter)
Libraries & Frameworks: Pandas, NumPy, Scikit-Learn, PySpark, XGBoost, CatBoost, LightGBM, FastAPI, Streamlit, ROS2, Protobuf
Tools & Platforms: Power BI (DAX), Databricks, Docker, Git, DBeaver, MS Excel, Azure (Basic), OpenStreetMap
Concepts: Machine Learning, Deep Learning, Big Data Analytics, ETL Pipelines, Computer Vision, Geospatial Analytics

Certifications

UTS BUILD (Beyond UTS International Leadership Development): Global Leadership Program
DataCamp: Data Scientist Professional Certification
IBM Data Science Specialization (Coursera): Python for Data Science, SQL, Methodology
NPTEL (IIT/IISc): Data Analytics with Python, Intro to Machine Learning
GitHub: View All Certificates

Leadership & Activities

UTS Peer Networker (University of Technology Sydney):   *Nov 2025 – Present*
Selected as a student leader to facilitate onboarding for 1,000+ new students during orientation. Demonstrated strong interpersonal skills by guiding diverse cohorts and collaborating with cross-functional teams to execute large-scale university events.

Technical Lead, Mechatronics & Robotics Society: Led AI/CV workshops for 200+ students and mentored teams.
Core Member, Thapar Adventure Club: Managed logistics and safety for 20+ expeditions involving 50+ participants.

References

References available upon request.