

# Agam Singh Saini

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LinkedIn | GitHub | Portfolio

## Professional Summary

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Results-oriented Masters candidate in Data Science with a strong technical foundation in Mechatronics Engineering. Expert in architecting real-time data pipelines, performing geospatial analytics, and building predictive machine learning models (XGBoost, CatBoost). Proven track record of processing billion-row datasets and deploying production-grade applications. Adept at bridging the gap between hardware systems and advanced data intelligence to drive operational efficiency.

## Education

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### Masters in Data Science and Innovation (GPA 3.5/4)

*University of Technology Sydney*

### B.E. in Mechatronics Engineering (CGPA: 8.77)

*Thapar Institute of Engineering and Technology*

Sydney, NSW, Australia

Feb 2025 – Present

Patiala, Punjab, India

Mar 2020 – Jun 2024

## Work Experience

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### Robotics Engineering R&D Intern

*CVRDE DRDO*

Jan 2023 – Jun 2023

*Chennai, Tamil Nadu, 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

*Spectrum Technology*

Jun 2023 – Aug 2023

*Ambala, Haryana, 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)

*Informed Care Services*

Apr 2025 – Present

*Sydney, NSW, Australia*

- Coordinate daily care plans for **5+ clients**, maintaining **100% documentation accuracy** in compliance with NDIS standards while managing academic commitments.
- Facilitate proactive communication between families and healthcare providers, resolving scheduling conflicts with **zero service interruptions** to ensure holistic care delivery.

## Projects

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### Safarnama (NSW Transit & Driving Intelligence App) | [Live App Link](#)

Feb 2026

- Engineered a high-throughput data pipeline consuming TfNSW GTFS-R (Protobuf) feeds to visualize **10,000+ live vehicles** with **5-second GPS refresh rates** and custom categorization (e.g., School Buses).
- Developed an intelligent trip planning engine in Flutter featuring "**Arrive By**" scheduling, **live stop departure boards**, and real-time vehicle crowding metrics to optimize multi-modal commutes.
- Integrated live API feeds and geospatial data to build comprehensive driver tools, including **real-time car park occupancy percentages**, dynamic cheap fuel locators, and commercial loading zone maps.

### Bitcoin Price Prediction System | [GitHub](#) | [Live Demo](#)

Nov 2025

- Orchestrated an end-to-end crypto analytics and price prediction 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<sup>2</sup> 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<sup>2</sup> 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

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**Languages:** Python, SQL, C++, C, Dart (Flutter)

**Libraries:** Pandas, NumPy, Scikit-Learn, PySpark, XGBoost, CatBoost, LightGBM, FastAPI, Streamlit, ROS2

**Tools & Platforms:** Databricks, Docker, Git, Power BI (DAX), Azure, OpenStreetMap, Protobuf

## Certifications

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**UTS BUILD:** Global Leadership Program

**DataCamp:** Data Scientist Professional Certification

**IBM Data Science (Coursera):** Python for Data Science, SQL, Methodology

**NPTEL (IIT/IISc):** Data Analytics with Python, Intro to Machine Learning

**GitHub:** [View All Certificates](#)

## Leadership Activities

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**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.

**Media Ambassador, UTS BUILD:**

*Nov 2025*

Applied strategic communication to translate complex program missions into accessible narratives for a diverse student body. Collaborated with international stakeholders to foster global leadership and cross-cultural tech communities.

**SOUL Program Volunteer:**

*Feb 2025 – Present*

Contributed to community engagement and social justice initiatives, supporting campus-wide events and campaigns that promote equity, inclusion, and overall student wellbeing.

**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

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References available upon request.