




# Agam Singh Saini

## EDUCATION

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**Masters in Data Science for Innovation** University of Technology Sydney, Sydney.  
**B.E. in Mechatronics Engineering; CGPA: 8.77** Thapar Institute of Engineering and Technology, Patiala.  
**10 + 2: Percentage: 86.2. || 10: Percentage: 84.4** Ryan International School, Chandigarh, Chandigarh.

## WORK EXPERIENCE

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- CVRDE DRDO** Avadi, Chennai, India  
*Robotics Engineering R&D Intern* Jan 2023 - June 2023
- Developed computer vision pipeline for autonomous systems using ROS2, implementing real-time person detection and obstacle avoidance algorithms with sensor data fusion; designed and simulated robotic components in PTC Creo, SolidWorks, and Gazebo.
  - Built data-driven navigation system processing sensor streams for path planning and decision-making; validated autonomous behavior through simulation metrics, achieving reliable object detection and collision-free operation in complex environments.
- Spectrum Technology** Ambala, Haryana, India  
*Mechatronics Engineering Intern* June 2023 - Aug 2023
- Developed IoT data acquisition system using LabVIEW and Arduino for real-time temperature monitoring, implementing persistent data logging and threshold detection algorithms; analyzed sensor data patterns to identify anomalies and prevent equipment failures.
  - Built automated alert system processing continuous sensor streams with data validation and persistence logic, ensuring zero data loss across power cycles and enabling historical trend analysis for predictive maintenance insights.
- Informed Care Services** Australia  
*Part-Time Support Worker* April 2025 - Present
- Provide personalized care and support to clients with disabilities and special needs, implementing individualized care plans while maintaining detailed documentation of daily activities, progress notes, and incident reports to ensure continuity of care.
  - Assist clients with daily living activities including personal care, medication management, meal preparation, and community participation, while fostering independence and promoting dignity through person-centered support approaches.

## PROJECTS

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- Bitcoin Price Prediction System:** | [GitHub](#) | [Live Demo](#)
- Built end-to-end cryptocurrency analytics platform with ML-powered predictions, RESTful API, and live dashboard.
  - Engineered prediction pipeline using XGBoost/LightGBM/CatBoost achieving **99.14% R<sup>2</sup> score** for next-day high price forecasting on 10 years of Bitcoin data (2015-2025).
  - Deployed production-ready FastAPI service with dual data integration (Kraken + CoinGecko APIs), Docker containerization, health monitoring, and automatic fallback systems.
  - Developed interactive Streamlit dashboard with real-time price tracking, multi-timeframe analysis, and custom theme system deployed on Streamlit Cloud.
  - Tech: Python, FastAPI, Streamlit, XGBoost, LightGBM, CatBoost, Docker, Poetry, Plotly, Hyperopt, LIME, W&B. (Nov '25)
- NYC Taxi Big Data Analytics & ML:** | [Link](#)
- Built scalable data pipeline processing **1B taxi records** on Databricks using PySpark, cleaning 70-80M invalid entries with production-grade validation rules.
  - Developed fare prediction models (CatBoost/XGBoost) achieving **87% R<sup>2</sup>** and **91% accuracy within \$8**, using advanced feature engineering and handling high-cardinality categorical variables.
  - Performed complex SQL analytics delivering business insights on trip patterns and revenue optimization across NYC boroughs.
  - Tech: PySpark, Databricks, Python, SQL, ML (CatBoost, XGBoost), Big Data Engineering. (Nov '24)
- PCOS Detection Using Machine Learning Methods:** | [Link](#)
- Developed predictive models for Polycystic Ovary Syndrome (PCOS) detection using clinical and lifestyle data.
  - Optimized feature selection and classification, achieving **89% recall** for true PCOS cases.
  - Tech: Python, Scikit-Learn, Data Analytics, Machine Learning, Data Visualization. (May '25)

## SKILLS

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**Programming:** Python, C++, C, SQL

**Technologies:** Power BI (including DAX), Git, SQL, Dbeaver, Docker, MS Excel, MS Word, MS PowerPoint, MS Office Suite.

**Core Competencies:** Machine Learning, Deep Learning, Data Analytics, Data Visualization, Image Processing, Big Data, Exploratory Data Analysis (EDA), ETL Pipelines.

**Soft Skills:** Project Management, Teamwork, Leadership, Critical Thinking, Problem Solving, Communication, Presentation.

## CERTIFICATIONS

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**DataCamp:** Data Scientist Professional Certification

**NPTEL (IIT/IISc):** Data Analytics with Python — Introduction to Machine Learning — Programming, Data Structures & Algorithms Using Python

**Coursera - IBM Data Science Specialization:** Data Science Fundamentals — Tools for Data Science — Data Science Methodology — Python for Data Science — Databases & SQL for Data Science

**Repository:** View All Certificates on GitHub

## LEADERSHIP & ACTIVITIES

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**Technical Lead, Mechatronics & Robotics Society:** Led workshops on AI, Computer Vision, and Robotics for 200+ students; organized technical events and mentored project teams (Jan '20 - Present)

**Core Member, Thapar Adventure Club:** Planned and executed 20+ expeditions and events; managed logistics, safety, and team coordination for 50+ participants (Jan '20 - Jun '24)

**National Cadet Corps (NCC) Airwing & NSS:** Developed leadership through military training and community service; organized social welfare camps and volunteer initiatives (Apr '21 - Jun '24)