Sumit Bahl

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Education

Degree	Institute/Board	Year
Bachelor of Technology, Electrical Engineering	Indian Institute of Technology, Ropar	2022-2026
Senior Secondary RBSE	Saraswati Public Senior Secondary School	2022
Secondary CBSE	Saraswati English Medium School	2020

Experience

- **Autonomous Drone Landing on Charging Pad**
  Jan 2025- June 2025   Dr. Ashwani Sharma | IIT Ropar
  – Designed an RF-based localization system for autonomous drone landing using ESP32 and Raspberry Pi 5.
  – Integrated AD8302 and ADS1115 with a 4-antenna array and NRF24L01 with one-antenna for real-time direction finding.
  – Developed a Python GUI for visualizing bearing and quadrant with calibrated signal processing.

- **AI Engineer Intern**
  June 2023 - Present   SOUL AI/Outlier | Remote
  – Reviewed and debugged SQL tasks, ensuring adherence to quality standards and improving task performance by 15%.
  – Provided detailed, constructive feedback to enhance model performance, leading to a 10% improvement in task accuracy.
  – Assisted in implementing AI-driven marketing campaigns, increasing brand awareness by 20%.

- **Growth Intern**
  June 2023 - July 2023   Factapp.in | Remote
  – Analyzed user acquisition strategies, resulting in a 15% increase in customer engagement.
  – Conducted competitor analysis, identifying growth opportunities that contributed to a 10% revenue boost.
  – Implemented data-driven marketing campaigns, achieving a 25% increase in customer acquisition.
  – Contributed to customer acquisition strategies, driving a 12% increase in revenue.

Projects

- **Financial Multi-Agent Retrieval-Augmented Generation System (FinMARAG)**   *Oct 2024 - Dec 2024*
  Python, Financial NLP, RAG Systems   **GitHub**
  – Developed MARAG, a Multi-Agent Retrieval-Augmented Generation system for financial data analysis using FinGPT.
  – Engineered adaptive retrieval and reasoning pipelines to process dynamic datasets with ethical AI compliance.
  – Designed scalable architecture in Python, delivering accurate insights from complex financial data streams.

- **Autonomous RAG for Financial Analysis (AURA)**   *Oct 2024 - Dec 2024*
  Full-Stack Development, RAG Systems, LLMs   **GitHub**
  – Developed AURA, a full-stack Multi-Agent-RAG system for real-time financial data analysis.
  – Integrated FinGPT and TableVision with adaptive RAG and Human-in-the-Loop for accurate, explainable financial insights.
  – Designed modular architecture with Python and TypeScript, achieving high precision on the FinanceBench dataset.

- **Stock Market Analysis**   *June 2024 - July 2024*
  Python, Data Analysis   **GitHub**
  – Utilized Python libraries (Pandas, NumPy, Seaborn, Matplotlib) to analyze financial data and identify key trends.
  – Developed interactive dashboards to visualize stock market metrics, aiding in data-driven investment strategies.

- **Stock Price Prediction Using LSTM**   *April 2024 - May 2024*
  Python, Machine Learning   **GitHub**
  – Built an LSTM-based model to predict future stock prices, achieving 88% accuracy in time-series forecasting.
  – Leveraged LSTMs to capture long-term dependencies in financial data, improving prediction reliability.

- **Data Science Projects**   *May 2024 - June 2024*
  Python, Machine Learning   **GitHub**
  – Titanic Survival Prediction: Built an ML model to predict passenger survival (85% accuracy) using age, gender, and class.
  – Movie Rating Prediction: Developed a regression model to estimate movie ratings (MAE: 0.3) based on director, and actors.
  – Sales Prediction: Created a Python model to optimize ad strategies, improving forecast accuracy by 18%.

Technical Skills

– **Programming Languages**: Python, C/C++
– **Machine Learning & Deep Learning**: TensorFlow, Keras, Scikit-learn, LSTM, Regression Models
– **Data Analysis & Visualization**: Pandas, NumPy, Matplotlib, Seaborn, Tableau, SQL
– **Web Development**: HTML/CSS, WebSockets, JSON, Real-Time Applications, Web API
– **Soft Skills**: Problem-Solving, Analytical Thinking, Team Collaboration, Attention to Detail, Market Research

Key Courses Taken

- **CSE and Maths**: Introduction to Programming Language, Data Structure and Algorithms, Probability and Stochastics, Differential Equations, Linear Algebra, Advanced Calculus
- **Electrical and Electronics**: Digital Electronics Circuits, Signals and Systems, Basic Electronics, Control Engineering, Circuit Theory, Electromechanics, Material Science for Electrical Engineering, Verilog
- **Others**: Data Science, Supervised Machine Learning, Consultant, SQL, MS Excel

Positions of Responsibility

Represntative, Alumni Relation Cell, IIT Ropar	*2025 - Present*
Hall Represntative, General Championship, IIT Ropar - (Winner of overall championship)	*2025*
Event Coordinator, Advitiya'24, SkyMasters by (Aero Club), IIT Ropar	***Link***
Mentor, Robotics Club, IIT Ropar - (Winner of best club award)	*2024 - 2025*
Coordinator, Robotics Club, IIT Ropar	*2023 - 2024*
Coordinator, Aeromodelling Club, IIT Ropar	*2023 - 2024*
Volunteer in Publicity, EE - RSF, IIT Ropar	*2022 - 2023*

Achievements

Inter IIT Tech Meet 13.0, Secured 6th rank in Pathway Challenge (GenAI) among all IITs	***GitHub***
NGO Volunteer, ATL Lab Renovation Project in Ropar initiated by PES under Deputy Commissioner	*Feb 2023 - Feb 2024*
Participation, Certificate of Participation in annual symposium 'METRIX 5.0' hosted by the Mechanical Department, IIT Ropar	