



Ankit Raj
UG (III Year II Semester)
BS-MS (Economics)
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Education

Year	Degree/Examination	Institution/Board	CGPA/Percentage
2024	BS 3rd Year	Indian Institute of Technology, Roorkee	7.957
2022	Intermediate (Class XII)	Krishna Public School	92.40 %
2020	Matriculate (Class X)	A.S.S Patna Central School	89.80 %

Internships

Analyst Intern | IIT Roorkee May 2024 - November 2024

- Built a complete **Python-SQL** pipeline to automate daily ingestion and transformation of structured tabular data
- Processed data from **5+ SQL tables** using **Pandas**, handling **25,000+ records per day** with business rule filters
- Uploaded refined outputs to target tables, powering internal **dashboards** and enabling **data-driven reporting**
- Maintained **data integrity** through modular code, real-time logging, and robust validation checkpoints

Projects

End-to-End Mock-Test Web Platform for JEE Preparation | NSS January 2025 - February 2025

- Built test platform using **React.js**, **Node.js**, and **MongoDB** with secure **JWT-based access control**
- Reduced test admin effort by **60%** through dashboard tools for creation, monitoring, and result declaration
- Enabled live test interface with **timers**, **navigation**, **scheduling**, and **media uploads via Cloudinary**

Real-Time Sports Chatbot using RAG for Pathway | GC Tech'25, IIT Roorkee April 2025

- Built RAG-based pipeline with **LangGraph** and fallback search to handle dynamic sports queries in real time
- Achieved **92% query coverage**, reduced latency by **35%**, and supported both **text and voice interaction**
- Delivered accurate match updates and player insights using modular tools for **retrieval and context grounding**

Multi-Agent AI System for Real-Time, Topic-Guided Article Generation | Self Project May 2025 - June 2025

- Designed modular agents using **LangGraph**, **Gemini**, and **Selenium** to generate source-cited live articles
- Reduced manual research-to-writing time by **70%**, improved factual consistency by **25%**, and latency by **40%**
- Enabled **50+ articles daily** through autonomous agents for query parsing, data scraping, and content generation

Machine Learning for Predicting Urban Expansion in Smart Cities | IIT Roorkee March 2024 - May 2024

- Employed **ConvLSTM** model on satellite data to predict urban expansion, monitoring land cover changes over time.
- Collected Remote Sensing Time Series satellite data for 2 Indian smart cities, Mumbai and Pune for a 15 year time period.
- Evaluated the model using a **Confusion matrix**, attained a F1 score of **0.81** and a **72%** prediction accuracy.

Credit Card Score Modeling via Classification & Risk Techniques | Finance Club May 2025 - June 2025

- Built a predictive score using **XGBoost** on **30,000+ records**, addressing imbalance via **SMOTE**
- Achieved **F2-score of 0.603**, identifying **84%** of defaulters for early warning and loss mitigation
- Created **20+ financial features** and tuned threshold aligned with the banks **risk policy**

Open Project : Optimizing Air Travel Through Flight Delay Prediction | Society of Business June 2025

- Built predictive models using **LightGBM** and **XGBoost** on **180K flight records** with custom **OAI** logic
- Achieved **0.73 ROC-AUC**, **0.61 F1-score**, and **~30 min MAE** for delay severity forecasting
- Used **SHAP** for interpretability and proposed strategies to reduce controllable delays across operations

Monopolistic Competition and International Trade: Applications in different economies around the world and India | IIT Roorkee August 2024 - November 2024

- Analyzed real trade data across **perfumes, shampoos, cosmetics** to assess **differentiation and scale effects**
- Evaluated **trade balances** and **consumer preferences** across **10+ countries** using structured data pipelines
- Mapped empirical flows to economic patterns, identifying Indias strengths in **product-based trade strategies**

Market Capitalization Forecasting with DeepLearning for FideIFolio | GC Tech'25, IIT Roorkee April 2025

- Developed **LSTM**, **MLP**, and encoder-decoder models for forecasting across 1Y 3Y investment horizons
- Trained on **25+ years** of data across **2796 Indian firms**, using engineered time-consistent splits
- Applied **PCA** on 28 indicators to reduce dimensionality and optimize learning on high-variance targets

Life Cycle Assessment of Products Enabling SHG Upliftment | UBA, IIT Roorkee January 2023 - March 2023

- Oversaw production of **eco-friendly gulal** with SHGs, ensuring quality control and consistent packaging
- Used past sales data to analyze **campus buying trends** and shape product quantity and pricing strategy
- Drove SHG income through targeted sales within campus, aligning with **cost recovery and impact goals**

Awards / Scholarships / Academic Achievements

• Won Sociothon 3.0 conducted by UBA IIT Roorkee

Skills

Computer languages	Python , R , Stata , C++ , java script , HTML , CSS , ReactJs
Software Packages	Excel , Power BI
Additional Courses	Statistics , Understanding Financial Markets, Summer Analytics- Data Analytics , Specialization in Machine Language, Winter Analytics - Future and Option Course.
Languages Known	English , Hindi

Positions of Responsibility & Extra Curriculars

Web-D Joint Secretary Team Wellness , IIT Roorkee	July 2024 - May 2025
<ul style="list-style-type: none">• Manage and maintain the Wellness Centre's website, ensuring seamless user experience and up-to-date content delivery.• Design, update, and optimize web pages to enhance accessibility, functionality, and overall site performance.• Implement regular security checks and backend updates to ensure reliability and data integrity.	
Sports Council Member Ravindra Bhawan, IIT Roorkee	October 2024 - May 2025
<ul style="list-style-type: none">• Led intra-bhawan sports tournaments, boosting participation and fostering a competitive athletic environment.• Coordinated logistics and resource allocation to ensure seamless execution of all sports activities.• Collaborated with peer teams to manage events efficiently and uphold team spirit throughout.	
Executive Member Unnat Bharat Abhiyan	August 2023 - May 2024
<ul style="list-style-type: none">• Led community development projects focused on improving rural livelihoods and infrastructure.• Executed sustainable business models empowering women through income-generating initiatives.• Launched and managed the Holi color initiative, enabling local women to produce and market eco-friendly products.	