ATUL KUMAR

📞 6200895492   ✉ Email   🌐 Portfolio   in LinkedIn   ○ GitHub   </> CodeChef   ☑ LeetCode

Education

Birla Institute of Technology, Mesra   **2023 – Present**
Bachelor of Technology in Chemical Engineering   *Ranchi, India*

Chinmaya Vidyalaya, Bokaro Steel City   **2021 – 2022**
Higher Secondary: Class: 11,12   *Bokaro, Jharkhand*

Relevant Coursework

- Statistics & Probability
- Predictive Analytics
- AI Automation
- Database Management
- Machine Learning
- Business Intelligence
- EDA
- Data Structures

Projects

Dental Caries Segmentation using YOLOv8s-Seg   **Jan 2025**
Deep Learning, Computer Vision, Medical Imaging

- Built an end-to-end instance segmentation pipeline to detect dental caries from radiographic images using YOLOv8s-Seg (PyTorch)
- Trained the model on high-resolution images (768×768) with AdamW optimizer and cosine learning-rate scheduling, emphasizing recall to reduce false negatives
- Evaluated performance using Precision, Recall, mAP@50, and mAP@50-95, achieving 22.6% mask recall on the validation set

Market Regime Detection using Time Series Clustering   **Jan 2026**
Python, Pandas, NumPy, Scikit-learn, Time Series Analysis

- Analyzed weekly NIFTY 50 data from 2018–2025 using rolling 5-week returns and volatility.
- Applied unsupervised clustering to classify market regimes into bull, bear, and sideways states based on return–volatility patterns.
- Identified bull regimes with returns between 0.02 and 0.10 and volatility below 0.03, while bear regimes showed drawdowns beyond -25% with volatility spikes up to 0.10.
- Evaluated regime-based strategies, showing momentum buy-and-hold in bull, while limiting losses during bear phases.

Risk-Adjusted Stock Ranking System   **Dec 2025**
Python, Pandas, NumPy, Financial Analytics, Time Series Analysis

- Analyzed 7 large-cap equities using daily price data from 2022–2025 to evaluate performance across market conditions.
- Computed key risk metrics including annualized volatility (2.42–22.28), Sharpe ratio (20.48–94.72), and maximum drawdown (-30% to -74%).
- Identified AAPL as the strongest risk-adjusted performer (Sharpe 94.72) while flagging high-risk stocks such as NVDA (volatility 22.28).

Technical Skills

Programming: C, C++, Python
Database & Tools: MySQL, DBMS, Power BI, MS Excel, Tableau
Data Analytics: Data Analysis, Data Modeling, Data Visualization, EDA
Cloud & Automation: AWS, Google Cloud, Automation Bots
Web Development: HTML, CSS, JavaScript, WordPress, Website Hosting
Machine Learning: Regression, Classification, Clustering, Scikit-Learn, PyTorch

Certifications & Job Simulations

The Data Analyst Course: Complete Data Analyst Bootcamp – Udemy

Deloitte Australia Data Analytics Job Simulation – Forage

Position of Responsibility

Executive Member – IIChE Club, BIT Mesra   **Mar 2025 – Present**
Technical Activities

- Collaborated in technical and data workshops focused on process optimization and visualization.
- Increased event participation by 25% through data-driven digital promotion for COALESCENCE'25.