



Niranjan S
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Examination	University	Institute	Year	CPI / % Credits
Graduation	IIT Bombay	IIT Bombay	2026	7.7 Core: 186 Total: 228
Intermediate	CBSE	T.K.M. Centenary Public School	2021	95.20%
Matriculation	CBSE	Sree Aurobindo Public School	2019	95.60%

ACHIEVEMENTS

- Secured **All India Rank 1112** in *IIT-JEE Advanced* examination among **0.15 million** candidates (2022)
- Secured **All India Rank 776** out of **1 million** candidates who appeared for *JEE Mains* examination (2022)
- Secured **Rank 41** in KEAM exam, conducted by the Govt. Of Kerala, among **0.1 million** candidates (2022)
- Secured **All India Rank 16** in CUSAT Common Admission Test among **22000** candidates (2022)
- Secured a \$60k funded trading account from **5%ers proprietary firm** by successfully passing their evaluation. (2024)

KEY PROJECTS

Trading Strategy Development | Self-Project (2025)

- Built and thoroughly backtested a **proprietary forex trading strategy** specifically tailored for the **New York trading session**, consistently achieving an **outstanding 71% win rate** across one full month of recorded trades.
- Conducted detailed analysis of **equity and P&L curves** to effectively evaluate **profitability, risk exposure, and resilience**, extracting actionable insights under **highly volatile market conditions** typical during NY hours.
- Maintained extensive **trade logs** and highly comprehensive **visual reports**, ensuring **transparent documentation** and enabling a **systematic, data-driven approach** to evaluating ongoing trading performance.

Options Pricing Model | Self-Project (2025)

- Developed a comprehensive and versatile **Python toolkit** implementing **Black-Scholes, Binomial, and Monte Carlo** models to accurately and efficiently price **European call and put options** under different market conditions.
- Automated option pricing across varying **parameters** and **market scenarios**, producing detailed **CSV outputs** for thorough analysis, enabling clear insights into **option value sensitivity** and **dynamic market behavior**.
- Documented underlying **financial theory, model methodology**, and results in extensive **technical reports** and organized code, clearly demonstrating advanced **quantitative finance knowledge** and strong **programming skills**.

Machine Learning on Real-Time Data with Streaming Dataset | Course Project (2023)

(Oct - Nov)

Guide: Prof. Abhir De | Course: CS 419: Introduction to Machine Learning

- Built a lightweight online **ML model** that accurately predicts **NIFTY-50 price movements** from daily streaming data, enabling real-time adaptation to rapidly changing and evolving **market dynamics**.
- Used **Python stack (pandas, numpy, matplotlib, scikit-learn)** with online **Stochastic Gradient Descent (SGD)** and an optional **block-SGD variant**; features: **open/high/low/close, volume, turnover, and temporal features**
- Computationally efficient for real-time use - achieved **test MSE ≈ 0.08** (20% test split); **block-based updates** reduce variance, improve overall **stability** and maintain low **CPU/memory requirements**.

Rubik's Cube Solver-using Korf's IDA* Algorithm | Self-Project (2025)

- Modeled a virtual **Rubik's Cube (3x3)** in 3 different **models/classes** using standard **data structures** in C++.
- Achieved **solving time** under 3 seconds for a Rubik's Cube jumbled 8 times, using **BFS, DFS, and IDDFS**.
- Implemented **Korf's IDA* algorithm**, solving a Rubik's Cube scrambled 13 times in under 10 seconds.

Optimization for Vehicle Routing Problem using Genetic Algorithms | Self-Project(2025)

- Used the **DEAP library** for **evolutionary computation**, applied it to solve a **maze**, then implemented it for **VRP**
- Crafted a **fitness function** for VRP, demonstrating strong **analytical skills** in **route efficiency** and **optimization**.
- Used **Matplotlib** to visualize **routing solutions**, enabling effective **data communication** and **decision-making**.

Algorithmic Trading | SOS '24 | MnP Club | IIT BOMBAY

- Developed trading strategies using **Smart Money Concepts (SMC)** such as **order blocks** and **Fair Value Gaps**, enhanced further with **technical indicators** including **MACD, VWAP, and RSI**.
- Used **Python APIs** for **real-time data** and built **models** for **backtesting, optimization, and risk management**.

OTHER PROJECTS

Health Insurance Cross-Sell Prediction | Course Project (2024) (Nov)
Guide: Prof. Narayan Rangaraj | Course:IE 401 Topics in Operation Research

- Applied multiple **ML algorithms** to training data to identify the most effective model for prediction.
- **Preprocessed features**, handled **class imbalance**, and trained **Logistic Regression, XGBoost/Random Forest** with **cross-validation, regularization, probability calibration, and hyperparameter tuning** for optimal performance.
- Model reliably ranks likely buyers (**AUC 0.88**).

Movie Recommender using ML | Self-Project(2024)

- Developed a movie recommender system that suggests similar movies based on **user interest** and **viewing history**, utilizing a **hybrid recommendation approach** to consistently deliver highly **personalized** and **relevant results**.
- Used **NLP-based vector embeddings** with **cosine similarity** to quickly and efficiently retrieve top movie recommendations while keeping **memory** and **computation costs** remarkably low for **large-scale applications**.

ML Model to determine Credit Risk | Course Project(2024) (Mar - Apr)
Guide: Prof. Shyam Kharagadde | Course: Applied Data Science and Machine Learning

- Applied multiple **ML algorithms** to training data to identify the most effective model for **credit risk detection**.
- Conducted detailed performance evaluations using metrics such as **precision, recall, F1 score, ROC-AUC, and confusion matrices**, also monitoring changes in **data distribution** to ensure the model’s long-term **robustness**.
- Investigated external and domain-specific factors—such as **macroeconomic trends, regulatory changes, and borrower demographics**—that could impact model **stability**, ensuring accurate and **fair lending decisions**.

Strategic Analysis on Dabur | Course Project (March - May 2023)
Guide: Prof. Ashish Pandey, SJM School of Management | Course:Introduction to Management

- Conducted in-depth analysis of Dabur, encompassing **GE Matrix, generic strategy, corporate strategy, organizational structure, SWOT analysis, TOWS analysis**, and competitive market positioning..
- Leveraged data-driven methodologies to inform strategic decision-making and competitive positioning.
- Collaborated effectively as a team of 3 to comprehensively analyze multiple facets of the company, combining expertise in business strategy, organizational structure, market dynamics, and various aspects.

TECHNICAL SKILLS

Programming

Software

C++ | Python | Python Libraries | HTML | CSS | \LaTeX
AutoCAD | Arduino IDE | Ansys | SolidWorks | Abaqus | MS Office

POSITION OF RESPONSIBILITY

Cultural Councillor | *Hostel 9* | *IIT Bombay*

- Led **cultural initiatives** for a **400+ student hostel**, organizing events and enhancing **community engagement**.
- Directed **Hostel 9’s participation** in **institute-level cultural championships** and coordinated, planned, and organised the vibrant **annual hostel fest**, significantly increasing **engagement** and enhancing overall **performance**.
- Managed a **team of 7 secretaries** and oversaw **budget planning** for successful, compliant **event execution**.

KEY COURSES UNDERTAKEN

Core	Solid Mechanics Fluid Mechanics Structural Mechanics Thermodynamics Applied Data-Science and Machine Learning Manufacturing of Materials Operations Modeling and Analysis
Others	Computer Programming and Utilization Calculus Differential Equations Linear Algebra Multivariate Data Analysis Machine Learning Quantum Physics and Application Biology Engineering Graphics and Drawing Chemistry Economics Operations Research

EXTRACURRICULAR

- Interned as Math Content Creator at Region Infinity, a startup focused on redefining math education using AI.
- Successfully completed a year long **NSO** programme of **athletics** at IIT Bombay.
- Coordinator at Techfest | IIT Bombay (Oct 2023 - Dec 2023)
- Corporate Relations Coordinator at E-Cell | IIT Bombay (Nov 2023 - Jan 2024)
- Participated in Dance, Fashion, and Main Dramatics General Championships (GC) representing Hostel 9. (2024) .
- Participated in Film GC representing Hostel 9; team secured 1st place that year. (2025)