Manish

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EDUCATION

Indian Institute of Technology	Roorkee, Uttarakhand
B.Tech, Electrical Engineering	*Aug'22 – May'26*
Prince UMV	Sikar, Rajasthan
Intermediate (Class XII)	*Aug'19 – May'21*
Jawahar Navodaya Vidyalaya	Hanumangarh, Rajasthan
Matriculate (Class X)	*Aug'14 – May'19*

EXPERIENCE

Research Consultant Intern — Jan'25 – Present
WorldQuant BRAIN

- **Spearheaded** the creation of sophisticated equity long-short market-neutral trading strategies, skillfully leveraging price-volume data, sentiment analysis, and deep fundamental data insights.
- **Engineered** and rigorously **Optimized** a suite of multiple alpha models, **attaining** impressive annualized returns exceeding 21% specifically for a range of carefully selected US stock sub-universes.
- **Conducted** extensive backtesting and realistic simulations across 6 years of historical market data, **ensuring** the robust profitability and long-term viability of the strategies through WorldQuant's proprietary software.

Web Developer Intern — May'24 – Jun'24
Biogenith Pharmaceuticals Pvt. Ltd.

- **Engineered**, **Developed**, and meticulously **Optimized** highly responsive websites utilizing a combination of HTML, CSS, and JavaScript technologies to deliver exceptional user experiences.
- **Leveraged** advanced front-end frameworks such as React.js to significantly **enhance** both the overall user experience and the core functionality of the websites developed during the internship.
- **Collaborated** effectively with diverse cross-functional teams to proactively **improve** website performance and overall usability, resulting in a more intuitive and engaging experience for end-users.

PROJECTS

Recommender System | *ARIES* — Dec'24 – Feb'25

- **Designed** an advanced grocery recommender system that intelligently leverages K-Means Clustering techniques and association rules based on detailed customer purchase patterns and preferences.
- **Developed** a highly efficient NLP search engine, expertly **utilizing** cosine similarity calculations on post-stemming count vectors to enable rapid and accurate product information retrieval.
- **Engineered** a sophisticated SVD model specifically tailored for new users, **achieving** a substantial 60% RMSE reduction and actively promoting diversity in personalized recommendations.

CPH VS Code Extension (LeetCode) | *Tinkering Lab* — Dec'24 – Jan'25

- **Developed** a VS Code extension designed to seamlessly **integrate** CPH (Competitive Programming Helper) directly with LeetCode, **enabling** automated test case fetching while deliberately excluding code submission.
- **Implemented** a robust system for problem URL parsing, well-structured test case storage, and versatile multi-language execution support, including both Python and C++ programming languages.
- **Designed** streamlined and user-friendly workflows that feature local test execution and comprehensive debugging capabilities; future GUI enhancements are planned to further improve overall usability.

ICAR: AI-Driven Age-Related Condition Detection | *ARIES* — Aug'24 – Sept'24

- **Conducted** a comprehensive exploratory data analysis (EDA), meticulous data cleaning processes, and careful feature scaling to enable effective age-related condition identification and in-depth analysis.
- **Trained** a variety of machine learning models, including SVM (86.73% accuracy), Decision Trees (88.51%), and XGBoost (95.31%), **optimizing** hyperparameters through the utilization of Optuna framework.
- **Evaluated** the trained models rigorously using both F1 score and accuracy metrics, **attaining** a well-balanced logarithmic loss score of approximately 0.581, demonstrating strong predictive performance.

Achievements

JEE Advanced : Successfully Secured All India Rank (AIR) of 4229, demonstrating exceptional problem-solving skills and academic prowess.
JEE Main : Achieved All India Rank (AIR) of 3800, reflecting a strong understanding of fundamental concepts and effective test-taking strategies.
INPhO 2021 : Proudly Ranked among the top 1% of participants nationwide, showcasing a deep passion for physics and a commitment to excellence in scientific pursuits.

Technical Skills

Languages: Python, C/C++, JavaScript, HTML/CSS
Frameworks: React, Node.js, WordPress, FastAPI
Developer Tools: Git
Libraries: TensorFlow, pandas, NumPy, Matplotlib

Positions of Responsibility

Student Mentor   Oct'24 – Present
Student Mentorship Program, IIT Roorkee
- **Mentored** a diverse group of five junior students through regularly scheduled weekly hybrid meetings, **providing** valuable guidance on stress management techniques, exam preparation strategies, and various career-related activities.
- **Facilitated** well-structured discussions and personalized mentoring sessions, effectively **helping** students **develop** more effective academic strategies and stay informed and updated on a wide range of emerging career opportunities.
- **Enhanced** students' overall time management capabilities and significantly **reduced** academic stress levels, thereby **boosting** their confidence and ultimately leading to improved academic performance and personal well-being.

Bhawan App Manager   Aug'23 – Jun'24
Hostel Council IIT Roorkee
- **Managed** and meticulously **coordinated** all operational aspects of the Bhawan App, **ensuring** seamless functionality and an optimal user experience for all hostel residents and stakeholders.
- **Contributed** actively and significantly to the ongoing app development efforts, continuous maintenance procedures, and performance optimization initiatives, thereby enhancing its overall effectiveness and user satisfaction.
- **Improved** the app's user experience through the implementation of consistent upgrades and innovative feature enhancements, resulting in higher user satisfaction levels and improved overall engagement metrics.

Coordinator, Cognizance 2024   Feb'24 – March'24
Annual Technical Fest of IIT Roorkee
- **Coordinated** the "Codify Rumble" event during Cognizance 2024, expertly **managing** all volunteers, participants, and logistical requirements to guarantee a seamlessly executed and well-organized competition environment.
- **Led** the team with effective communication and collaboration strategies, skillfully **facilitating** productive meetings, **providing** clear instructions, and promptly **resolving** any issues that arose to maintain project momentum.
- **Implemented** numerous innovative ideas, proactively **introducing** engaging interactive elements and activities that noticeably **increased** participant satisfaction and overall engagement throughout the duration of the event.