JEEVAN B A

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Education

Vellore Institute of Technology, Vellore — Jul 2021 - May 2025
B.Tech in Computer Science and Engineering — *CGPA - 9.01*

Narayana Olympiad School, Bangalore — Jun 2019 - May 2021
Higher Secondary School — *Percentage - 87.2%*

Narayana Olympiad School, Bangalore — Jun 2018 - May 2019
Secondary School — *Percentage - 86.6%*

Internships

Rashtriya Ispat Nigam Limited (Vizag Steel Plant) — Sep 2023 - Oct 2023
Project Trainee — *Visakhapatnam*

- Developed a lead time prediction model using machine learning to estimate delivery dates for orders in the Tenders & Procurement Division.
- Analyzed 25 years of historical data and designed a Decision Tree model in Python to improve forecasting accuracy.
- Optimized procurement timelines by identifying key factors influencing lead time, enhancing decision-making efficiency.

ETHNUS — Aug 2023 - Dec 2023
Project Intern — *Remote*

- Developed a full-stack Pet Lost and Found Platform using the MERN stack, streamlining the process of reuniting lost pets with their owners.
- Applied robust CRUD operations, secure user authentication, and a dynamic, responsive UI using React.js.
- Integrated real-time updates with WebSocket technology and engineered a matching algorithm to efficiently connect lost and found pet records.

Publications

Web 3.0 Learning and Teaching English (Chapter Author) — Jun 2023
Computer Specialized Cross Disciplinary Views on Communication and Life Skills

- Co-authored a chapter that integrates Web 3.0 technologies in English education, highlighting the shift to interactive learning via AR and VR; the book has been accessed by over 2,000 professionals and students globally.
- Analyzed decentralized systems such as blockchain for educational platforms, noting enhancements in security and efficiency that are pivotal for modern educational technologies.
- Evaluated the effectiveness of mobile technologies and AR in personalizing language learning, contributing to a 30% increase in engagement and comprehension in pilot studies.
- Provided a comprehensive overview of the evolution from Web 1.0 to Web 3.0, outlining their transformative impact on educational methodologies and learner engagement.

Projects

Leveraging Lattice-Based Cryptography for Enhanced Security in Blockchain-Enabled CBDCs and Cross Border Payments | *Python, Blockchain, Quantum-Resistant Cryptography, Ethereum Sepolia Testnet*

- Proposed lattice-based cryptographic techniques to enhance the security of cross-border payments and Central Bank Digital Currencies (CBDCs).
- Improved a quantum-resistant blockchain framework by integrating Learning With Errors (LWE), Ring-LWE, and Fully Homomorphic Encryption (FHE).
- Tested the system on the Ethereum Sepolia Testnet via Infura, ensuring scalability, security, and real-time blockchain transaction validation.

Integrating GDELT News Sentiment and NSE EOD Data for Stock Price Prediction | *Python, Pandas, NumPy, Scikit-Learn, XGBoost, LightGBM, CatBoost, TensorFlow, Keras, Neural Networks*

- Collected and normalized NSE stock data, integrating sentiment analysis from GDELT to enhance predictive models, reflecting real-time market moods and movements.

- Developed and optimized a range of machine learning and deep learning models including Random Forest, XGBoost, LightGBM, and TensorFlow-based and PyTorch-based neural networks, significantly improving forecast accuracy.
- Implemented a real-time prediction system with comprehensive economic viability analysis, providing actionable insights for investment strategies and decision-making.

Deep Learning-Based Dementia Detection Using Neuroimaging | *Python, TensorFlow, Keras, ResNet50*

- Enhanced a deep learning solution using ResNet50, modified for high-accuracy classification of dementia stages from brain MRI scans, leveraging transfer learning to capitalize on pre-trained image recognition capabilities.
- Employed advanced image preprocessing to enhance data uniformity and model training efficacy, significantly boosting diagnostic precision.
- Achieved robust model performance with rigorous validation techniques, demonstrating potential clinical applications for early and accurate dementia staging.

Factor Model & Smart Beta Portfolio Builder for Indian Markets | *Python, Streamlit, Pandas, Plotly, NumPy*

- Developed a web application to analyze factor exposures and build custom factor-based portfolios using Indian stock market data. Integrated tools include Pandas for data manipulation, Plotly for interactive charts, and Streamlit for web deployment.
- Implemented advanced data processing functions to manage and analyze large datasets, including custom date range filtering, factor calculation, and backtesting of portfolio performance against market benchmarks.
- Designed and optimized several financial models to calculate value, momentum, volatility, and quality scores, providing a composite view of stock performance and aiding in strategic investment decision-making.
- Engineered a robust backtesting mechanism to evaluate the performance of factor-weighted portfolios, featuring metrics such as CAGR, Sharpe Ratio, Sortino Ratio, and maximum drawdown, enhancing the tool's utility for potential investors.

NSFW (Not safe For Work) Text Monitoring App | *Python, Flask, Scikit-learn, Pandas, NLTK*

- Designed an AI-powered tool to detect and filter offensive, hate speech, and NSFW text content in real-time.
- Leveraged machine learning models trained on real-world datasets to ensure accurate and efficient content moderation.
- Integrated a REST API and web interface using Flask, facilitating seamless deployment on Render.

Customer Churn Prediction | *Python, Linear Regression, Decision Trees, Random Forest, Pandas, Scikit-Learn*

- Analyzed telecom customer data to predict churn behavior using machine learning techniques.
- Implemented Logistic Regression, Decision Trees, and Random Forest models, evaluating performance with accuracy, precision, recall, and F1-score.
- Generated insights into customer attrition factors, aiding in targeted retention strategies.

Certifications

Introduction to Generative AI (Certification Link)

Data Science with Python (Certification Link)

Python Data Structures (Certification Link)

Programming for Everybody (Getting Started with Python) (Certification Link)

Crash Course on Python (Certification Link)

Python3: From Beginner to Pro (Certification Link)

C Programming For Beginners - Master the C Language (Certification Link)

Beginning C++ Programming - From Beginner to Beyond (Certification Link)

Technical Skills

Programming Languages: Python, C/C++, Java, SQL, JavaScript, HTML/CSS, R
Machine Learning Frameworks: TensorFlow, PyTorch, Keras
Web Development Frameworks: Flask, FastAPI
Libraries: Pandas, NumPy, Matplotlib, Scikit-Learn, NLTK, TA-Lib, QuantLib