

SOLANKI OM NARENDRA

AI/ML Undergraduate | Full-Stack AI Engineer | Jain University

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Ambitious AI/ML Undergraduate at Jain University specializing in the technical architecture of intelligent systems. Expert in bridging Machine Learning research with scalable Full-Stack engineering, with a focused arsenal in predictive modeling, dimensionality reduction, and advanced system optimization.

TECHNICAL ARSENAL & CORE COMPETENCIES

- AI & Machine Learning:** Neural Architectures, NLP, Computer Vision, OpenCV, MediaPipe, TensorFlow, Scikit-learn (LDA, Autoencoders).
- Data & Systems:** Data Warehousing, Virtualization, Database Management, Algorithms on Graphs, SQL, Linux, Docker.
- Programming:** Python (Basics), Java, HTML, Git.
- Core Computer Science:** Data Structures & Algorithms, OOP, Dynamic Programming, Data Analysis

DEEP TECH DEVELOPMENT

CTI Event Classification over Sysmon Logs (2025)

- Engineered an end-to-end predictive pipeline that identifies MITRE ATT&CK tactics from complex Sysmon logs by conducting research-level comparative analysis between **Latent Dirichlet Allocation (LDA)** and **Neural Autoencoders**.
- This system optimizes feature extraction and detection precision in non-linear data structures to enhance cyber threat intelligence.

Dual-Threshold Face Recognition System (2026)

- Architected a high-security visual access control system using **OpenCV**, incorporating a **proprietary dual-threshold mechanism** to drastically minimize False Acceptance Rates (FAR) in biometric environments.
- Balanced real-time computational efficiency with high-security constraints to ensure accurate and scalable authentication.

Real-time Posture Detection (2026)

- Developed a health-tech application for continuous spinal alignment monitoring by utilizing real-time skeletal landmark tracking to provide instantaneous corrective feedback to users.
- Leveraged advanced computer vision techniques to analyze physical posture and prevent long-term health anomalies.

Health-Predictive Analytics using ODE Modeling & Machine Learning (2026)

- Engineered a hybrid diagnostic system integrating **Ordinary Differential Equations (ODE)** with **Logistic Regression** to simulate heart rate dynamics and predict potential health conditions like Hypertension and Sleep Apnea.
- Developed a predictive pipeline utilizing **StandardScaler** for feature normalization and **SciPy's odeint** to model real-time physiological response shifts based on activity levels and BMI.
- Implemented a data-driven framework that translates multi-modal inputs—including age, sleep patterns, and blood pressure—into actionable disease risk assessments with a system-first architectural approach.

Spam Detection Logic

In this project, you are using the **Multinomial Naive Bayes** algorithm. It works on the principle of **Conditional Probability**:

- The model calculates the probability that an email is spam given the presence of specific "trigger" words.
- By using **TF-IDF**, the model gives less weight to common words (like "the" or "is") and more weight to rare, high-intent words (like "lottery" or "urgent"), making the detection much sharper.

House Price Regression Logic

This is a **Supervised Learning** task where the goal is to find the "Line of Best Fit" through a multi-dimensional cloud of data points.

- Feature Engineering:** You are likely using **One-Hot Encoding** to turn categorical data (like "Neighborhood Name") into numbers the machine can understand.
- The Goal:** The model minimizes the "Residual Sum of Squares"—the distance between the actual price and the price the model predicted—to ensure the highest possible accuracy.

Stock Price Prediction & Visualization

- Time-Series Analysis:** Engineered a forecasting tool that utilizes **Linear Regression** to predict future price targets based on historical market trends.
- Data Pipelines:** Integrated the **Alpha Vantage API** to fetch real-time daily adjusted stock data, ensuring data integrity through temporal sorting and sanitization.
- Technical Indicators:** Applied **Moving Averages (5, 10, 20-day)** and high-fidelity candlestick charting to identify professional market signals and sentiment.

VisionEdge: Real-Time Multithreaded Emotion Analysis

- Engineered a high-performance computer vision system using **multithreading** to decouple AI inference from the main video stream, ensuring a lag-free, smooth user experience.

- Optimized computational efficiency by implementing **frame-skipping** and **dynamic input scaling**, reducing processing overhead while maintaining high detection accuracy via the **DeepFace** framework.
- Developed custom coordinate mapping logic to accurately overlay dominant emotion labels and facial bounding boxes in real-time onto high-resolution live feeds.

PROFESSIONAL MILESTONES

- **NavaNIETi 2026:** Represented Jain University in a 24-hour National Level Hackathon at NIE Mysuru, successfully delivering rapid technical prototypes under high-pressure competitive constraints. 2026
- **Smart India Hackathon (SIH):** Selected to address real-world national problem statements in India's largest open innovation model, demonstrating rapid execution and large-scale problem-solving. 2025
- **Deloitte Consulting Internship:** Mastered enterprise Business Intelligence by transforming complex datasets into interactive Tableau dashboards to facilitate data-driven decision-making. 2024
- **Incepatrix Hackathon:** Recognized as a continuous finalist in back-to-back hackathons (2024 & 2025), proving the ability to maintain technical excellence and prototyping speed in high-stakes environments. 2024-5

CORE TECHNICAL CERTIFICATIONS (COURSERA)

- Johns Hopkins University: Introduction to Genomic Technologies
- UC San Diego: Algorithms on Graphs
- KAIST: Differential Equations Part I
- IBM: Exploratory Data Analysis for ML
- Meta: Introduction to Databases
- University of Colorado: Quantum Mechanics
- University of Colorado System: Data Warehouse Concepts
- Georgia Institute of Technology: Material Behavior
- University of Virginia: Design Thinking for Innovation
- University of Michigan: Programming for Everybody (Python)
- BITS Pilani: Introduction to Computing Systems
- Codio: Intro to Operating Systems: Virtualization
- Board Infinity: Technical Writing
- UNESCO MGIEP: SEEK (Social Emotional Education)

EDUCATION

- **Jain University, Bengaluru (2024 – Present):** Currently pursuing a Bachelor of Technology (B.Tech) in Computer Science and Engineering with a specialized focus on Artificial Intelligence and Machine Learning (AIML). You have maintained a strong academic record with an 8.7 SGPA while representing the Computer Science & Engineering Department in national technical arenas.
- **PP Savani Cambridge International School (Completed 2024):** Completed your Higher Secondary Education (HSC) with a 75% aggregate. Your studies were focused on Computer Science, Mathematics, and Physics, providing the foundational rigor for your current engineering degree.

LEADERSHIP & EXPERIENCE

- **The Turing Club | Technical Core Member:** Driving university-level AI/ML research initiatives and facilitating advanced technical workshops.
- **Team ReGenX | Team Lead:** Spearheaded the multidisciplinary development of a gesture-based healthcare IoT solution with sub-100ms response time.(NavaNIETi 2026)
- **CognitoClub | Graphic Designer (2025):** Crafted user-centric digital assets and visual communications using Figma and Adobe XD.