

RUHIKA NENE

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Machine Learning Intern | Backend Python Developer Intern

SUMMARY

Fourth-year Electronics and Computer Engineering student (GPA 9.57/10) with hands-on experience in Machine Learning and backend Python development. Built an explainable AI pharmacovigilance model in a recent internship at IEEE EMBS. Proficient in Python, FastAPI, REST APIs, SQL, and Scikit-learn/PyTorch, with a strong foundation in Data Structures and Algorithms, System Design, and Database Management. Seeking Machine Learning and Backend Python Developer internship roles.

TECHNICAL SKILLS

- Programming Languages: Python, C++, Embedded C
- Backend Development: Flask, FastAPI, REST API Design, CRUD Operations, API Testing
- Machine Learning: Feature Engineering, Scikit-learn, PyTorch, Supervised & Unsupervised Learning, NLP, RAG, Computer Vision, LightGBM, SHAP, BioBERT
- Data Analysis: Pandas, NumPy, Exploratory Data Analysis (EDA), Data Cleaning, Data Visualization
- Databases: PostgreSQL, MySQL, MongoDB
- Core CS: Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP), System Design
- Tools & Platforms: Git, GitHub, Docker, OpenCV, Flutter
- Hardware & IoT: Arduino, ESP32, Sensor Integration

WORK EXPERIENCE

IEEE Engineering in Medicine and Biology Society (EMBS) — Machine Learning Intern *June 2026 (1 Month)*

- Designed and implemented ContextRx, an explainable AI-based pharmacovigilance system for adverse drug reaction (ADR) prediction targeting the Indian patient population.
- Trained a LightGBM classification model that achieved 94% accuracy and 0.98 AUC, outperforming baseline models on the evaluation set.
- Integrated biomedical NLP (BioBERT) for contextual feature extraction and SHAP for model explainability to support clinical decision-making.
- Built synthetic healthcare datasets and engineered multimodal features (text, structured clinical data) for model training and evaluation.
- Authored a full technical research paper, structured knowledge-base CSVs.

PROJECTS

Personal Finance Tracker *Flask, PostgreSQL, Python, Scikit-learn*

- Built a backend system using Flask and PostgreSQL to manage income, expenses, and savings data via a relational schema.
- Designed and implemented REST APIs for CRUD operations on financial records with structured error handling.
- Applied classification models to analyze spending patterns and generate personalized savings insights.

Indian Sign Language Translator *Python, OpenCV, Scikit-learn*

- Built a real-time gesture recognition system to translate sign language into text using a Random Forest classifier.
- Implemented computer vision pipelines with OpenCV for hand-landmark detection and feature extraction.
- Improved accessibility for communication with hearing-impaired users through real-time inference.

Smart College Mart *Flask, SQLite, Python*

- Developed a peer-to-peer marketplace backend enabling students to exchange academic resources.
- Designed REST APIs and a normalized database schema for listings, users, and transactions.

Prolonged Inactivity Monitoring System *ESP32, Flutter, Sensors*

- Designed an IoT-based system to monitor inactivity in senior citizens using PIR and force-sensing resistors.
- Built a Flutter application to log, store, and send real-time inactivity notifications.

ACHIEVEMENTS

- E-Yantra Innovation Challenge (IIT Bombay) — Semi-Finalist: Designed a secure agricultural financing platform using contract-based logic on the MERN stack.
- E-Yantra Innovation Challenge (IIT Bombay) — Semi-Finalist: Developed a blockchain-based traceability system for Schedule X drugs with a React.js monitoring interface.

PUBLICATIONS

- Authored a chapter in “Path to Nobel,” a book profiling the life and work of Nobel laureates in Chemistry and Medicine.

EDUCATION

PES Modern College of Engineering, Pune *Expected Graduation: 2027*

B.E. Electronics and Computer Engineering — GPA: 9.57/10 (6th Semester) with CGPA: 8.60

Suryadatta National School (CBSE)

12th Grade (PCMB) — 74.6%

Vidya Valley School (ICSE)

10th Grade — 91.5%

ACTIVITIES & LEADERSHIP

- Robotics Club Member — Electronics and Management Domain
- Google Developers Student Club Member
- Departmental Electronics Magazine — Writer and Editor
- IEEE Student Branch Member and Management Head

LANGUAGES

English, Marathi, Hindi