Karthik Jonnalagadda

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Objective

"Final-year Data Science engineering student with a solid academic foundation and hands-on experience in data analysis, machine learning, and software development; passionate about leveraging data-driven solutions to address real-world challenges and eager to contribute to impactful AI and data science projects."

Projects

Empowering Rural Healthcare Through AI Solutions

- *Jan 2025 – Apr 2025 | Team Size: 4*
- **Technologies/Tools:** AI/ML frameworks, Telemedicine platforms, Literature-based analysis
- Researched rural healthcare challenges (specialist shortage, delayed diagnostics, weak infrastructure).
- Evaluated AI solutions (telemedicine kiosks, AI diagnostics, maternal monitoring) for rural adaptability.
- Proposed an AI-driven framework for data collection, diagnostic support, patient triaging, and training.
- Case study showed **25% improvement in early disease detection** and **50% fewer unnecessary hospital visits**.

Outcome: Developed a scalable framework to improve accessibility, reduce delays, and optimize resources.

SafeInbox: Real-Time Email Spam Detection

- *Feb 2025 – May 2025 | Team Size: 4*
- **Technologies/Tools:** Python, Scikit-learn, React.js, Node.js, MongoDB, IMAP, Docker
- Built a machine learning pipeline (Naïve Bayes, Logistic Regression, SVM) for real-time spam detection.
- Integrated IMAP for Gmail fetching and developed a MERN-based dashboard with search, sort, and spam filters.
- Designed a secure frontend with authentication and MongoDB connectivity; deployed using Docker for scalability.
- Achieved **~94% spam detection accuracy** with reduced false positives.

Genomic Data Dimensionality Reduction & Clustering Analysis

- *Feb 2025 – Apr 2025 | Team Size: 2*
- **Technologies/Tools:** Python, Scikit-learn, Pandas, Matplotlib, Seaborn, Numpy
- Applied SVD and NMF for dimensionality reduction on high-dimensional genomic datasets.
- Conducted exploratory data analysis (variable gene identification, correlation heatmaps, visualization of top genes).
- Performed K-Means clustering, achieving **ARI scores: 0.6592 (SVD) and 0.5611 (NMF)**.
- Validated biological separation using Random Forest classification on reduced features.

Outcome: Built a reproducible Python framework balancing SVD's numerical accuracy with NMF's interpretability.

Lost & Found Mobile Application

- *Feb 2025 – Apr 2025 | Team Size: 4*
- **Technologies/Tools:** React Native, SQL, REST APIs, JWT Authentication
- Developed a cross-platform mobile app for reporting, searching, and claiming lost or found items.
- Implemented JWT authentication and role-based access control with AES-256 secure storage.
- Built REST APIs with SQL backend, achieving **<100 ms latency** and **99.9% uptime**

Outcome: Delivered a secure, scalable, and user-friendly platform enhancing item recovery efficiency and trust

Education

B-Tech (CSE-Data Science), NIIT University, Neemrana− 2022–2026
XII, Sri Gayatri Junior College, Hyderabad, Telangana (State Board)− 2022
X, New Era School, Khammam, Telangana (State Board)− 2020

Skills

- **Languages:** Python, JavaScript, Java, R
- **Frontend:** HTML, CSS, android studio, React, Next.js
- **Backend:** Node.js, Express.js, Django, REST APIs
- **Databases:** MySQL, MongoDB
- **Machine Learning Libraries:** NumPy, Pandas, Matplotlib, Scikit-learn, TensorFlow
- **Cloud Technologies:** Google Cloud
- **Version Control:** Git, GitHub