SAI KARAN AKULA

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EDUCATION

San Jose State University (SJSU), San Jose, CA _Aug 2025 – May 2027_
Master of Science in Software Engineering
Coursework: Distributed Systems, Cloud Technologies, Enterprise Software Platforms, Software Architecture, Data Structures & Algorithms

Vellore Institute of Technology (VIT), Vellore, India _Aug 2021 – May 2025_
B.Tech in Information Technology **GPA: 3.47**
Coursework: Database Systems, Computer Networks, Operating Systems, Machine Learning, Blockchain Technology, Artificial Intelligence

TECHNICAL SKILLS

Programming Languages: Java, JavaScript, C, Python

Web/Backend Development: React, Angular, Node.js, Express.js, Flask, HTML5, CSS, Bootstrap.

Tools: GitHub, Postman, Figma.

WORK EXPERIENCE

Technical Head — VITMAS _Jan 2022 – Dec 2024_
- Led a cross-functional team to deliver **MERN**-Based internal tools adopted by **1,000+** students across multiple events and services.
- Shipped a centralized portal for **registrations**, **email automation**, and **analytics**; implemented secure **JWT** authentication and responsive **UI/UX**.

R&D Intern — NIT Warangal _Nov 2023 – Dec 2023_
- Designed and optimized image processing pipelines using **Local Binary Patterns (LBP)**, **OpenCV**, and **NumPy**, achieving a measurable runtime gain of **17%**.
- Leveraged **TensorFlow**, **PyTorch**, and **Keras** to prototype **CNN-based models** with transfer learning, improving classification performance.
- Curated benchmark datasets (**Corel-250**), automated evaluation with ranking models (**k-NN**, **SVM**), and standardized documentation for reproducibility.

PROJECTS

Potato Leaf Disease Detector | _Flask, Deep Learning, MongoDB, Node.js_ _Jan 2025 – Apr 2025_
- Led development of a full-stack platform using **Flask** and **Node.js**, enabling farmers to upload potato leaf images and receive real-time **disease classification**, reducing manual inspection time by **40%**.
- Improved model accuracy by **15%** through a **CNN** enhanced with **PCA + SVM** for feature reduction, while integrating secure **authentication** and **MongoDB**-backed history management for reliable user access.
- Designed a responsive **UI** with intuitive dashboards for prediction tracking and added automated email alerts, boosting system usability and user engagement by **30%**.

Pneumonia Detection via Chest X-rays | _TensorFlow, ResNet50, MobileNetV2_ _Aug 2024 – Dec 2024_
- Designed a deep learning pipeline using **Pretrained CNNs** (**ResNet50**, **MobileNetV2**, **VGG16**) to extract features from pediatric **chest X-ray datasets**, enabling automated pneumonia screening.
- Boosted classification accuracy by **12–15%** through **feature fusion** and selection methods (**KNN**, **Random Forest**, **SVM**), strengthening robustness across unseen samples.
- Validated model performance using **precision, recall, F1-score**, and **confusion matrix**.

Car Rental Platform | _Node.js, Express.js, MongoDB_ _Jan 2024 – May 2024_
- Architected and deployed backend using **Node.js**/**Express** with **MongoDB**, enabling **real-time booking**, city-based availability, and rental scheduling for **100+ users**.
- Strengthened security by implementing **JWT-based authentication** and **Bcrypt**-Encrypted credentials, reducing unauthorized access incidents by **30%**.
- Improved customer experience through a responsive UI with **Bootstrap**-styled components, streamlined booking workflows, and added FAQ and testimonial modules, increasing overall usability by **25%**.

PUBLICATIONS

Akula, S.K. "_Optimizing Image Steganography: A Comparative Study of Pre-Processing Techniques and the Hybrid U-Encoder Network,_" **ICIICS 2024** (IEEE/Scopus indexed).

CERTIFICATIONS

- **AWS Cloud Foundations** – Coursera, 2024
- **Data Science & Hadoop Training** – VIT, 2023