SAI KARAN AKULA

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EDUCATION

San Jose State University , San Jose, CA   *Aug 2025 – May 2027*
Master of Science in Computer Software Engineering
Coursework: Distributed Systems, Cloud Technologies, Software System Enterprise, Software Architecture.

Vellore Institute of Technology, Vellore, India   *Aug 2021 – May 2025*
B.Tech in Information Technology   **GPA: 3.47**
Coursework: Database Systems, Computer Networks, Operating Systems, Data Structures & Algorithms.

TECHNICAL SKILLS

Programming Languages: Java, Python, JavaScript, C, SQL

Full-Stack Development: React, Node.js, Express.js, Flask, HTML5, CSS, Bootstrap, Tailwind CSS, REST APIs, GraphQL, MongoDB, PostgreSQL

Cloud & Tools: AWS (EC2, S3, RDS, IAM, Lambda, CloudWatch, API Gateway), Git, GitHub, Docker, CI/CD pipelines, Postman, VS Code, Figma.

Software Engineering: Data Structures & Algorithms, System Design & Scalability, Agile Methodologies, OOP, Software Architecture, Design Patterns, Responsive UI/UX Design

WORK EXPERIENCE

Technical Head — VITMAS   *Jan 2022 – Dec 2024*
- Spearheaded a cross-functional team of 12 developers to design and deploy **MERN-based internal platforms**, streamlining technical operations for **1,000+ students** across workshops, hackathons, and events.
- Built and launched a centralized **portal for registrations, analytics, and email automation**, reducing manual overhead by **60%** and enhancing event management efficiency.
- Directed project planning, delegated tasks, and facilitated collaboration between developers, faculty, and student coordinators, strengthening team communication and ensuring timely project delivery.

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, MongoDB, Node.js, EJS*   **Link**
- Led the creation of a full-stack application using **Flask** and **Node.js**, enabling users to upload potato leaf images and receive instant **disease classification**, cutting manual inspection effort by **40%**.
- Engineered robust data management by integrating **MongoDB** for persistent session tracking and prediction history, while optimizing queries to ensure reliable, fast, and scalable access to disease insights.
- Developed an interactive frontend with **EJS**, designing responsive dashboards for real-time prediction visualization and embedding user-centric features such as email alerts and streamlined navigation to improve engagement by **30%**.

Pneumonia Detection via Chest X-rays | *TensorFlow, ResNet50, MobileNetV2*   **Link**
- Built an end-to-end pipeline leveraging **ResNet50**, **MobileNetV2**, and **VGG16** to extract image features from pediatric **chest X-ray datasets**, enabling automated pneumonia screening.
- Enhanced diagnostic reliability by **12–15%** using feature fusion and classical models (**KNN**, **Random Forest**, **SVM**), ensuring robust predictions across varied samples.
- Compiled results into clear visual reports with comparative metrics, making findings more accessible to non-technical stakeholders and supporting decision-making in healthcare settings.

Car Rental Platform | *Node.js, Express.js, MongoDB, React*   **Link**
- 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%**.
- Built a dynamic frontend with **React**, implementing reusable components and state management that streamlined feature development and improved client-side responsiveness by **25%**.

CERTIFICATIONS

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