Uday Krishna Banala

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WORK EXPERIENCE

Software Engineer   Mar 2024 - Dec 2024
Web developer Intern at NTL

- Led development of 6 plus full-stack web apps, including a food recipe platform and projects like Day and Night and Mythos, driving more than 500 active users. Applied scalable component architecture, Git, and full-cycle Agile workflow practices.
- Spearheaded development of a College Admission Portal in an Agile environment, achieving a 25% reduction in load times through responsive UI optimization and backend refinement.

Chief Technical Lead   Apr 2023 – Oct 2023
SRMAP - Tech club

- Architected and deployed 3 scalable web platforms for club events using React.js, vite, PostgreSQL and supabase, enabling seamless registration and login for 700 and more users with responsive UI and data validation.
- Led a 4-member team and runner up at a Devfolio hackathon by building a full-stack healthcare platform using React.js, Node.js and supabase enabling organ-based filtering of 50 doctors and and a hundred affiliated hospitals through scalable backend.

PUBLICATIONS

Pixel Manipulations for Image Security   Paper ↗

Published author in IEEE; developed Caesar cipher based image encryption using pixel displacement, enhancing visual data security by 87% with 100% decryption accuracy ideal for event-driven low-resource IoT applications compared to AES.

PROJECTS

Intelligent Traffic Monitoring, Violation Management and fine collection   *github* ↗

- Designed and implemented a Full-stack Computer Vision enforcement system using YOLOv8 and PaddleOCR, achieving 92.8% mAP for helmet detection and 95% plus license plate OCR accuracy. The pipeline automates violation detection from raw images with high precision.
- Built and deployed a real-time violation detection web app with OpenCV, and Google Colab for backend training. Fine-tuned a custom YOLOv8 model on more than 4,100 annotated images, leveraging to achieve a 98.3% mAP for license plate detection.

Web - Based GUI for Rapid ECG Interpretation Using Deep Learning Models   github ↗

- Designed and evaluated multiple deep learning frameworks (CNN, DenseNet, MobileNet, Hybrid LSTM) for the automated, multi-class classification of ECG images into four critical cardiac categories: Myocardial Infarction, History of MI, Abnormal Heartbeat, and Normal.
- Achieved a peak classification accuracy of 89.78% by implementing a novel hybrid architecture combining MobileNet for spatial feature extraction and LSTM for temporal analysis, significantly outperforming standalone CNN (87.63%) and DenseNet (86.56%) models in identifying cardiac abnormalities.

Recipe Whirl : A Full-Stack Software Solution   github ↗

- Developed Recipe Whirl, a full-stack app using React 18 and Vite for a 40% faster development build, architecting a serverless backend with Supabase and implementing PostgreSQL 100% Row Level Security for user data.
- Implemented secure Google OAuth and real-time data subscriptions for instant UI updates, designing a responsive interface with more than 30 reusable Tailwind CSS components to query over 1,000 API recipes.

EDUCATION

Bachelor's Degree at **SRMAP University**	(GPA: 7.54/10.0)	Sep 2021 - Expected July 2025
Class 12th CBSE	(89.3%)	Jun 2019 - May 2021
Class 10th SSC-TS	(93%)	Jun 2018 - May 2019

SKILLS

Programming Languages / DB :	JavaScript, Typescript, Python, C++, C, SQL, HTML/CSS, PostgreSQL, NoSQL
Frameworks/Libraries:	React.js, Node.js, FastAPI, Supabase, Vite, Tailwind CSS, Bootstrap
Developer/ops Tools :	Git, GitHub, IntelliJ IDEA, Android Studio, Jupyter, Pycharm, Eclipse, Anaconda
UI UX / Design Tools :	Figma, Design Systems, Prototyping, Wireframing, Adobe XD
Cloud Platforms / Services:	AWS, Azure, Docker, Kubernetes, Vercel, Netlify, Google Colab