

Yegu Sanjana Annamalai

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SOFTWARE ENGINEER | FULL STACK DEVELOPER | MACHINE LEARNING ENGINEER
EDUCATION

[University of Illinois Urbana-Champaign](#) | Master of Computer Science | Computer science | GPA: 3.9/4.0 | May 2026

[SRM Institute of Science and Technology](#) | Bachelor of Technology in Computer Science (AI&ML) | GPA: 9.37/10 | May 2023

PROFESSIONAL EXPERIENCE

Software Engineer | [Truvara Technologies LLP](#)

May 2025 – July 2025

- Built and deployed a scalable GRC platform (Next.js, TypeScript) for 500+ users, collaborating across Agile teams to accelerate **feature delivery**.
- Integrated Strapi CMS to enable real-time content updates and **continuous deployment**, reducing release overhead by 60%.
- Developed 30+ reusable UI components (Radix UI, Tailwind) and refined UX through **user feedback**.

Software Engineer | [Ozone Cloud](#)

Jul 2023 – Dec. 2024

- Revamped full-stack architecture with **clean coding standards** and **modern development practices**; earned **Developer of the Month**.
- Enhanced Tekton-based CI/CD pipelines, automating 15+ workflows with **continuous verification** to cut manual effort by **70%** and accelerate release cycles.
- Engineered Velero-based backup & restore framework for AWS, GCP, Azure, and MinIO, ensuring **scalable** multi-cloud **reliability**.
- Optimized Kubernetes manifests and containerized resource allocation to support **high-volume server deployments**.
- Streamlined 50+ third-party service integrations, improving security posture and performance testing coverage.

Trainee Software Engineer | [Ozone Cloud](#)

Jan 2023 – Jun 2023

- Collaborated with a 5-member **cross-functional team** to implement Backstage developer portal, reducing onboarding time.
- Co-developed blockchain MVP using **Agile methodologies**, enabling rapid prototyping and product-market validation.
- Authored 50+ automated test cases, reducing production defects by **15%** and promoting **best practices in quality assurance**.

PROJECTS HANDLED

Yield Prediction with NDVI (Individual Project) — University of Illinois Urbana-Champaign

Aug 2025

- Built a geospatial ML pipeline to forecast county-level crop yields from satellite NDVI, merging USDA yield data with NDVI features (mean, peak, variability).
- Trained **Linear Regression & Random Forest**; holdout results: **Linear R^2 0.993 / RMSE 0.811, RF R^2 0.952 / RMSE 2.172**; added coefficients & feature-importances for explainability.
- Delivered a **CLI inference** tool to score new-season NDVI CSVs; persisted models/metadata with joblib; structured for Sentinel-2/Landsat and weather (rain/GDD) extensions.

Tech: Python (pandas, NumPy, scikit-learn, joblib), matplotlib; **Remote Sensing (NDVI)**, **GIS (county-level aggregation)**, CLI tooling.

SOAP.AI | (SALT Lab, Prof. Yun Huang) — University of Illinois Urbana-Champaign

July 2025

- Developed a Resemblyzer-based **speaker diarization pipeline** with agglomerative clustering, enabling real-time 1080p video analysis with optimized processing overhead.
- Enhanced domain-adaptive video analysis for multiple content types by adding context-sensitive question generation and contributing to **vision-language model fusion**.

Tech: GPT-4 / GPT-4o (Vision), Azure Whisper, Resemblyzer, Scikit-learn, OpenCV, MoviePy, PyDub, Python (FastAPI), Pandas, NumPy

Document QA with Retriever–Reader Pipeline (Individual Project) — University of Illinois Urbana-Champaign

May 2025

- Built an end-to-end **Retriever–Reader pipeline** inspired by DPR/RAG, using **LangChain(PyPDFLoader, RecursiveCharacterTextSplitter)**, **FAISS**, and **Cohere embeddings** for semantic retrieval.
- Added a rule-based document classifier with type-aware prompting and context expansion; deployed as a Flask web app with PDF ingestion and QA via Hugging Face **RoBERTa** reader.

Tech: Python (Flask, pandas, NumPy), LangChain, FAISS, Cohere Embeddings, Hugging Face Transformers (RoBERTa).

Deep Learning Approach to Indian Sign Language Recognition — SRM institute of Science & Technology

May 2023

- Achieved **99.41% accuracy** in recognizing 36 static ISL alphabets and digits using CNN-based models. Enabled real-time detection for deployment in varied environments. Contributed as a co-author to a research paper based on project results.

Tech: OpenCV, computer vision, Keras, TensorFlow, Convolutional Neural Networks (CNN), Python, HTML, Flask

Music Recommendation System based on Facial Emotion Recognition — SRM institute of Science & Technology

Dec 2022

- Implemented CNN-based facial emotion detection (happiness, anger, sadness) with **96%** validation accuracy and built a dynamic recommendation pipeline for playlist personalization.
- Published findings in the *International Journal of Research and Analytical Reviews (IJRAR)*. “A Deep Learning Approach to Music Recommendation System Based on Facial Emotion Recognition” – International Journal of Research and Analytical Reviews (IJRAR), Vol. 9, No. 4, pp. 22–26, Dec 2022.

Tech:- OpenCV, Keras, TensorFlow, CNN, Python, Flask

KEY SKILLS

Programming & Scripting: Golang · Python · C/C++ · JavaScript (ES6+) · Java · TypeScript · SQL · Bash · Linux · Command-line Scripting

Frameworks & Libraries: React.js · Next.js · Redux · Tailwind CSS · FastAPI · Flask · Node.js · Pydantic · Strapi CMS · PyTorch · TensorFlow · Keras · Scikit-learn · OpenCV · Hugging Face · Spark · Pandas · NumPy · Matplotlib

Cloud & DevOps: AWS (EKS, ECS, Lambda, S3, Kinesis, Glue) · Azure · GCP · Docker · Kubernetes · Tekton · MinIO · Terraform · Jenkins · CloudFormation · Grafana · Prometheus · ELK Stack · CI/CD Pipelines · Helm

Databases & Storage: MySQL · PostgreSQL · SQLite · MongoDB · Redis

AI & ML: Deep Learning · Computer Vision · NLP · LLMs · Prompt Engineering · Retrieval-Augmented Generation (RAG) · Vector Search · Embeddings · Speaker Diarization · CNNs · Transfer Learning · Data Augmentation · Statistical Modeling

Testing & Tools: Cypress · Postman · Git · Jira · Bitbucket · Confluence · Unit Testing · Integration Testing · Automated Testing

Practices: Object-Oriented Design · Data Structures · Algorithm Design · Agile/Scrum · Cross-functional Collaboration · Microservices · REST APIs · GraphQL · Scalability · Reliability · Clean Coding Standards · Software Development Lifecycle (SDLC) · Problem-solving