Sravya Yepuri

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SKILLS

- Programming & Scripting: Python, R, C, C++, Java, SQL, JavaScript (Node.js, React.js)
- Cloud & DevOps: AWS (EC2, S3, SageMaker, Lambda, OpenSearch), GCP (BigQuery, Compute), Kubernetes, Docker, Git, Ansible, Helm
- Databases & Big Data: PostgreSQL, MySQL, MongoDB, Hadoop, Spark, RabbitMQ, PowerBI, MariaDB
- ML / AI: PyTorch, TensorFlow, Scikit-learn, OpenCV, Hugging Face, OpenAI, LangChain, LangGraph, RAG, LLaMA, BERT, Gemini
- Certifications: R Programming, Machine Learning (Coursera), AWS Cloud Practitioner

EDUCATION

North Carolina State University - Raleigh, United States *Aug 2023 – May 2025*

- *Master of Computer Science,* **CGPA: 3.9/4.00**
- Coursework: Automated Learning and Data Analysis, Database Management, Computer Networks, Cloud Computing, Neural Networks, Parallel Systems, Graph Theory
- Teaching Assistant for Courses: Artificial Intelligence for Engineering Applications (MAE 495 and 589), Graph Theory (CSC 565)

PES University - Bengaluru, India *Aug 2019 – Jul 2023*

- *Bachelor of Technology in Computer Science and Engineering,* **CGPA: 8.91/10.00**
- Coursework: Data Analytics, Operating Systems, Big Data, Network Analysis and Mining, Software and Systems Performance, Microprocessors

PROFESSIONAL EXPERIENCE

Software Development Engineer I, Applied Contexts Consulting, Raleigh, USA *Jul 2025 – Present*

- Engineered backend microservices for AI-driven document processing using Python, Flask, PostgreSQL, and RabbitMQ, improving data pipeline reliability by 20%.
- Implemented LLM workflows (GPT-4, LLaMA) using LangChain and LangGraph for prompt chaining and agentic behavior, increasing task automation coverage.
- Integrated OCR and RAG components with OpenAI APIs and Tesseract for document context retrieval, boosting information extraction precision.

Web Development Intern, National Aerospace Laboratories, CSIR, Bengaluru, India *May 2024 – Jun 2024*

- Designed and deployed interactive UI features using HTML5, CSS, JavaScript, Canvas, and Video APIs, enhancing user engagement for aerospace visualization interfaces.
- Implemented object positioning algorithms with triangulation techniques, optimizing system accuracy by 15%.

Cloud Developer Intern, Hewlett Packard Enterprise, Bengaluru, India *Jan 2023 – Jul 2023*

- Monitored and analyzed cloud microservices logs in Compute Ops Management (COM) using Humio Dashboard, ensuring system reliability.
- Developed and validated REST API test cases, improving change propagation and cloud service reliability in HPE GreenLake, OneView, and Kafka. Automated cloud provisioning and deployment pipelines using Python, Bash, and GitHub Actions, reducing deployment time by 30%.
- Secured 1st position in a division-wide hackathon by automating Helm values and integrating GitHub Actions, streamlining CI/CD workflows, and enhancing deployment efficiency.

Research and Development Intern, Fourth Paradigm Institute, CSIR, Bengaluru, India *Jun 2022 – Aug 2022*

- Developed deep learning models (CNN, AlexNet, ResNet) for medical image AML and NHL classification, achieving 89% test accuracy.
- Enhanced model performance through transfer learning, hyperparameter tuning, and data augmentation. Optimized image preprocessing pipelines through noise reduction and morphological operations for improved model generalization.
- Contributed to peer-reviewed research published at IITCEE 2023 “Classification of Blood Cell Data using the Deep Learning Approach” (DOI: 10.1109/IITCEE57236.2023.10090986).

Research and Development Intern, National Aerospace Laboratories, CSIR, Bengaluru, India *Jan 2022 – Feb 2022*

- Built a real-time fatigue detection system using OpenCV and Dlib, analyzing PERCLOS, MOR, and HBR metrics, achieving 90% accuracy.
- Implemented real-time facial tracking with OpenCV and Dlib, improving robustness in varied conditions.Designed eyelid movement and head posture analysis algorithms, refining fatigue detection precision.

PROJECTS

Parallel Collatz Conjecture-Based Cryptographic Hashing - C/C++, OpenMP, MPI, Linux

- Developed a robust cryptographic hash function based on Collatz sequences to enhance data security for password hashing.
- Designed and implemented a high-performance C/C++ algorithm leveraging parallel computing frameworks (OpenMP for multi-threaded CPU and MPI for distributed computing) with integrated performance profiling and benchmarking tools.
- Leveraged NC State’s ARC HPC infrastructure (AMD Milan CPU clusters, NVIDIA A100 GPUs, Linux) to execute strong/weak scaling experiments, ensuring high scalability, optimized execution time, and efficient load balancing.

Spam Classification with Spark MLLib - PySpark, SKlearn, MiniBatch KMeans, Naïve Bayes, SGD Classifier, Socket programming

- Developed a real-time spam detection system using PySpark streaming and incremental learning, processing large-scale email datasets.
- Implemented text preprocessing and feature extraction with LabelEncoder and Hashing Vectorizer, optimizing data representation.
- Trained and evaluated ML models (Naïve Bayes, SGD Classifier, MiniBatch K-Means) to ensure high classification accuracy and scalability.

StoryTube: Generating 2D Animation for a Short Story - Python, Stanford NLP, AllenNLP, CARDINAL, NetworkX, OpenCV.

- Built a text-to-animation pipeline leveraging NLP (Stanford NLP, AllenNLP) for coreference resolution, dependency parsing, clause extraction.
- Developed graph-based scene representation with NetworkX, modeling character interactions and scene transitions for automated animation.
- Integrated OpenCV for rendering, converting structured narratives into dynamic 2D visual sequences with automated object placement.
- Research published at 3rd ICCIKE 2023, Amity University, Dubai (DOI: 10.1109/ICCIKE58312.2023.10131811).

Automated Transcription of Middle English Manuscripts - Python, OCR, Tesseract, ANN, DBScan, Transkribus, XML

- Developed an OCR pipeline using Tesseract and Transkribus with ANN and DBScan for historical manuscript transcription.
- Implemented clustering-based character segmentation and regression for word length prediction, improving text recognition accuracy.
- Refined OCR outputs by compensating for imperfect bounding boxes through manual data augmentation.