MANASA SAI KARANAM

+1689-275-6137 Oviedo, FL manasakaranam6199@gmail.com LinkedIn GitHub Portfolio

EDUCATION

Master of Science : Computer Science, University of Central Florida May 2025
GPA: 4.0/4.0
Relevant coursework: Design and Analysis of Algorithms, Advanced Data Structures, Machine Learning, Distributed Systems & Cloud Computing and Computer Vision.

Bachelor of Technology: Computer Engineering, Indian Institute of Information Technology SriCity 2016 - 2020
GPA: 8.32/10

SKILLS

Golang, Python, C, Java, MySQL, MongoDB, Aerospike, DynamoDB, PySpark, HDFS, Kafka, Snowflake, Beego API, Gin, Django, Flask, FastAPI, AWS (EC2, S3, Lambda, RDS, CodePipeline, DynamoDB, CloudWatch, SNS), RabbitMQ, HTML, CSS, JavaScript, React.js, Git, Docker, Kubernetes, Blockchain, Linux, Unit-Testing, Tableau, Data Visualization, Research Documentation.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant June 2024 - Present
University of Central Florida Oviedo, FL

- Contributed to two comprehensive survey papers focusing on advanced AI techniques: Parameter-Efficient Fine-Tuning (PEFT) and Lung Aging Models.
- Performed data collection, data analysis, and model evaluation using various datasets to compare and contrast different AI techniques.
- Developed figures and flowcharts to effectively communicate complex research findings and support clear documentation.

Graduate Teaching Assistant May 2024 - July 2024
University of Central Florida Oviedo, FL

- Led lab sessions and assisted professor for Intro to Discrete Structures course, reinforcing concepts with practical exercises and examples.
- Conducted regular office hours, providing personalized academic support and addressing student inquiries regarding course material.

Software Development Engineer September 2021 - December 2023
Tanla Platforms Ltd. Hyderabad, India

- Engineered a blockchain-powered telecom system processing 1M+ daily transactions using Hyperledger Fabric, RabbitMQ, Aerospike, and Redis Cache, ensuring scalable, and real-time message authentication.
- Refactored and migrated 150+ legacy applications from Python to GoLang, using goroutines, channels, and worker pools for concurrency, reducing cloud costs by 30%, and increasing system throughput by 50%.
- Orchestrated and deployed the Smart Contracts with 100% accuracy, securely storing and managing commercial communication ensuring compliance with TRAI regulations and preventing unsolicited messaging, reducing legal risks by 30%.

- Built high-performance RESTful and gRPC APIs using Gin and FastAPI, integrating MySQL, MongoDB, and Redis to handle 1,00,000+ API calls daily with low latency, efficient data retrieval, and seamless scalability.
- Automated report generation using AWS S3 and Parquet, ensuring 99.9% data precision, while reducing repetitive manual deployment efforts by 80% through the implementation of Kubernetes and Docker-based CI/CD pipelines, streamlining both reporting and deployment processes.
- Delivered a portal to automate the manual port-out process for the support team, reducing processing time by 50% and improving operational efficiency by streamlining workflows, handling over 1,000 requests daily.

Software Engineer - Data Platforms July 2020 - September 2021
Larsen and Toubro Infotech Mumbai, India

- Optimized ETL workflows for COVID-19 analytics (Spark and Snowflake), reducing data processing time by 40% and improving fault tolerance, resource efficiency, and integrating SMPP/SMTP for data pipeline notifications.
- Designed AWS-based data pipelines using S3, Glue, Redshift and Lambda, reducing storage costs by 30% and allowing age-wise population analysis. Visualized insights in Tableau for data-driven policy decisions.

PROJECTS

AI-Powered Job Matching Platform (Hackathon – ALPFA, Morgan Stanley "Code to Give", Alpharetta 2024)

- Spearheaded the development of an AI-driven job recommendation system using React.js, Cohere's LLM, FastAPI, and PostgreSQL, automating resume/job parsing and intelligent matching for over 5,000 job seekers, improving candidate-job fit accuracy by 35%.
- Implemented real-time notifications, filtering, and job-event ranking with RabbitMQ, Amazon SNS, and match scores, streamlining recruiter-candidate interactions and processing 1,000+ job applications daily, enhancing engagement and reducing time-to-hire by 25%.

Historical Video Quality Restoration using Deep Learning Models (Competition – UCF AI/ML Hackathon 2024)

- Pioneered a video restoration solution using DeOldify and ESRGAN, enhancing 500+ hours of historical content, improving color accuracy by 60% and boosting image resolution to 4K.
- Crafted the pipeline for colourization followed by upscaling, slashing manual effort and processing time by 70%, while delivering high-definition, visually enriched archival content, elevating the user experience with enhanced resolution and vivid color accuracy.

ZJS – Smart Water Advisory Framework (Research Paper Published at – IEEE ACIT 2020 Germany)

- Structured a satellite-driven pipeline optimization system using Django, MySQL, and OpenCV, enabling intelligent interconnection of water sources, reducing pipeline distances by 36%, and cutting infrastructure costs, while improving water resource distribution efficiency by 40% and reducing environmental impact by 20%.
- Published at the IEEE ACIT 2020 Conference in Germany, showcasing the practical applications of AI-powered pipeline optimization for sustainable water management, demonstrating a significant reduction in infrastructure costs and enhancing resource distribution efficiency.

LICENSES & CERTIFICATIONS

- Docker Foundations Professional Certificate Mar 2025
- Build REST APIs with FastAPI – LinkedIn Learning Mar 2025
- Generative AI: Introduction to Large Language Models – LinkedIn Learning Mar 2025