SASI KANDURI

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EDUCATION

Master of Science, Computer Science — California State University, Sacramento — **Aug 2022 – Dec 2024**

Bachelor of Technology, Information technology — Jawaharlal Nehru Technological University, India — **Aug 2013 – May 2017**

WORK EXPERIENCE

Office of Water Programs — **Sacramento, CA**
Software Engineer — **Jun 2023 – Present**

- Designed and developed a Water Quality Testing System with web applications and microservices for the State Water Resources Control Board of California using React, Python, Flask/FastAPI, GraphQL, SQLAlchemy, Jinja and RabbitMQ to support PFAS chemical sampling, testing and analytical results reporting across 4,000 wells.
- Designed and implemented a Stormwater Analytics Web Tools System for the California Department of Transportation, enabling state consultants to report real-time storm data, analyze chemical contamination levels, and predict water quality impacts.
- Developed reusable Python packages for cross-functional teams, leveraging Pandas, NumPy, and Matplotlib, to analyze and visualize water quality and hydrologic datasets, achieving 90% reusability.
- Developed automation scripts and data pipelines using Python and Airflow for sampling schedule notifications, data analysis and contamination results notifications to over 1,000 water systems, eliminating manual workflows by 90%.
- Designed and implemented MS SQL Server database schemas, incorporating tables, procedures, triggers, views and indexes to support various data workflows, ensuring data integrity and optimal performance.

Graphwear Technologies — **Sacramento, CA**
Software Engineer Intern — **Apr 2025 – Jul 2025**

- Developed iOS application in Swift to interface with a Bluetooth-enabled wearable device, implementing data packet parsing and observer patterns to display real-time lactate measurements.
- Built and deployed FastAPI backend on AWS using ECS Fargate, RDS PostgreSQL and Alembic to store and analyze sensor data and provide API endpoints for the mobile app and dashboards.
- Implemented CI/CD pipeline using AWS CloudFormation and Bitbucket Pipelines for automated infrastructure provisioning, testing and deployment, streamlining the development workflow.

Aaseya — **Hyderabad, India**
Software Engineer — **Aug 2020 – Jun 2022**

- Developed secure RESTful APIs using Spring Boot with JWT authentication, implementing custom exception handling, input validation, and Spring Security configurations to facilitate judiciary data exchange in a court management system.
- Architected and developed case management solutions for the Ministry of Justice of Saudi Arabia using advanced PEGA web development concepts including Case Types, Flow Rules, Process Rules, Connect-REST/Service-REST and Service Level Agreement (SLA) rules to streamline court operations like hearings and case registrations.

JK Tech — **Hyderabad, India**
PEGA Developer — **Jan 2019 – Aug 2020**

- Developed government service software modules for the OnePortal system of the State of Andhra Pradesh, building Education and Real Estate Regulatory Authority related features including examination scheduling, plot registration, and regulatory compliance workflows using PEGA's case management.
- Integrated multiple payment gateway solutions (CCAvenue and Axis Bank) into the application using JSP rules and Service-REST configurations, enabling online transactions for exam fees, regulatory payments, and registration services.

PROJECTS

Personal Spotify Agent

- Engineered a conversational AI agent using LangGraph that interprets natural language commands and orchestrates Spotify operations through a ReAct workflow, replacing traditional button-driven UIs with tool calling.
- Implemented Spotify OAuth authentication and developed custom tools for the Spotify Web API, enabling playlist manipulation, track discovery, and library management through conversational interactions.

Hash-based Proof of Stake Consensus Protocol

- Researched and evaluated a novel proof-of-stake consensus algorithm using Python with Multithreading and RSA encryption to simulate a 100-node blockchain network, achieving 15-20% improvement in decentralization metrics and transaction efficiency over traditional protocols like Coinage.

SKILLS

Languages: Python, Java, Javascript, C, C++ **Frameworks:** React, Flask, GraphQL, FastAPI, Spring Boot, pyTorch, LangChain, LangGraph

Databases: MS SQL, PostgreSQL, MongoDB **Tools/Software:** Git, IntelliJ, VS Code, Maven, Docker, AWS, Jenkins, Airflow