VASAVI DODDAMANI

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EDUCATION

- **University of California , Santa Cruz** *Santa Cruz, CA*
  Master's, Computer Science Engineering *Aug 2024 – Dec 2025*
  Course Work: Artificial Intelligence, Analysis of Algorithms, Computer Architecture, Distributed Systems

PROJECT WORK

- **Cache Miss Analysis and Optimization in Scarab Simulator**
  Optimized cache performance by implementing a multi-threaded 3C (Compulsory, Capacity, Conflict) cache miss analysis module, improving system performance and reducing execution stalls in multi-core processor simulations.
  Technologies: C++, Multi-threading, System Performance Optimization, Discrete Event Simulation
- **Branch Prediction Enhancements in Scarab for Multi-core Processors**
  Designed and implemented a two-level branch predictor in Scarab, optimizing branch prediction accuracy in multi-core processor simulations and conducting a comparative analysis against TAGE and Perceptron-based predictors, improving system performance, and reducing execution stalls.
  Technologies: C, C++, Multi-core Systems, Multi-threaded Programming, Performance Optimization, Debugging
- **Ingestion of Social Media data into Data-Lake**
  Contributed to a 'Data Ingestion into Data Lake' project, using Python to scrape and store unstructured data in Hadoop with Spark. Assisted in managing large social media datasets to improve data cleaning and processing.
  Gained experience with Spark, Hadoop, and MapReduce.
- **AI-powered code optimization with profiling feedback**
  Designed and implemented an AI agent that identifies performance issues like CPU utilization. It generates revised versions of the code and compares the performance of the original and revised code for each file in a folder containing C++ programs. If the revised code improves performance, it is retained; otherwise, it is discarded.
  Technologies: Python, perf, AI Agent, Gen AI,
- **Network simulator bridge using ns-3 simulator**
  A simple, low-overhead pipeline consisting of a message server and client interface libraries that bridge together distributed applications and network simulators like omnet++ and ns-3. Evaluated NSB's performance to confirm that it incurs a relatively light computational load and exhibits a relatively small memory footprint.

WORK EXPERIENCE

Senior Software Engineer | Eastern Software Systems *Oct 2022 – June 2024 | Bengaluru, India*

Client: Tokio Marine HCC

- Implemented Azure functions to manage and enforce uniform tagging rules on over 10,000 company-wide Azure resources, and this tagging information was fetched using GraphQL APIs.
- Developed an IP distribution system using Terraform and AWS IPAM Pool, successfully allocating IP blocks and CIDRs across 1000s of virtual networks on AWS & Azure platforms.

Client: Standard Chartered Bank

- Worked on creating standard and customized configurations via APIs for F5 network devices, alongside designing an intuitive and user-friendly UI using HTML, CSS, and JavaScript to complement the functionality that improved user interaction by 40%. Automated Change Request creation using ServiceNow APIs in the module.
- Designed and implemented solutions for commissioning and decommissioning 1000+ network devices, integrating these processes with monitoring tools like Sevone and Netbrain via AppViewx and direct REST API calls.
- Developed automated Python scripts that effectively write data to Excel sheets, facilitating streamlined processes for pushing configurations or conducting result comparisons for the network devices.
- Mentored newly joined members, training them to work independently and acquire all necessary skills.

Software Engineer | Thomson Reuters *May 2021 – Oct 2022 | Bengaluru, India*

- Developed Backend REST APIs and Lambda functions using AWS services (Lambda, API Gateway) for normalizing PDFs in the law domain, reducing processing time by 30%.
- Created comprehensive test suites (unit, integration, pre, & post-hooks) using the Pytest framework for API testing.
- Worked on refactoring environment variables for AWS Lambda functions to overcome storage limitations and increase configuration flexibility.

TECHNICAL SKILLS

- **Programming Languages(s):** Python, Java, C, C++, SQL, linux
- **Frameworks & Technologies:** REST API, GraphQL, Flask, Pandas, Numpy, Pytest, Unit Test, HTML, CSS, JavaScript
- **Cloud Technologies:** AWS (API Gateway, Step Function, Cloud Watch, DynamoDB, Lambda, EKS, ECS), Azure,

Kubernetes, Microservices, Distributed Systems, Multi-Threading, Operating Systems, Kafka, Jenkins, CI/CD

- **Database:** PostgreSQL, MySQL, NoSQL, Redis
- **Tools & Practices:** Git, Docker, Object Oriented Programming, Shell Scripting, Linux, Agile, Scrum, Django, SDLC, SQLAlchemy, Unit Testing, Test-Driven Development, Data Structures, Algorithms, Design Patterns, Debugging

CERTIFICATIONS & AWARDS

- Full Stack Web Development using FLASK – LinkedIn Learning.
- RESTful API Development using FLASK – LinkedIn Learning.
- Received the BPS Star Performer award and GEMS.
- Gold Medalist in Engineering College. (2nd Rank).