

Shiva Kalyan Diwakaruni

Software Engineer

(864)-765-7701

sdiwaka@clemson.edu

linkedin.com/in/shiva-diwakaruni/

EDUCATION

Master of Science, Computer & Information Sciences, Clemson University, GPA: 4.0/4.0

Aug 2023 - Dec 2024

Courses: Extreme Parallel Programming, Parallel Architecture, Cloud Computing, Database Management Systems, Software Design

Bachelor of Tech., Computer Science & Engineering, Jawaharlal Nehru Technological University, GPA: 4.0/4.0

Aug 2016 - Sep 2020

PROFESSIONAL EXPERIENCE

Co-Founder and Software Engineer | Axon Ride and Delivery Services

May 2024 - Present

- Developed scalable feed service for ride and delivery app, utilizing **Node.js** and **React Native** for responsive interface, and created RESTful APIs for post and user **CRUD** operations.
- Implemented robust, scalable keyword-based search service with ELK stack (**Elasticsearch**, **Logstash**, **Kibana**).
- Integrated **AWS S3** for storing images of profile pictures and posts, ensuring efficient and secure storage management.
- Architected services as microservices, deploying with **Docker** and **Kubernetes**, and utilized **PostgreSQL** with PostGIS for efficient geospatial queries and indexing, resulting in 40% improvement in query efficiency.

Graduate Research Assistant | Clemson University

Jan 2024 - Present

- Designing parallel and distributed computing library from scratch for Heterogeneous Automated Management of Multiscale Methods and Resources using **C++**, OpenMP and MPI to enable efficient load balancing and asynchronous communication of processes.
- Engineered multi-criteria path planning framework for autonomous vehicles using **Python**, MATLAB, optimizing navigation in unstructured environments.

Senior Associate Software Engineer | MathWorks

Nov 2020 - Jul 2023

- Enhanced performance of real-time data streaming visualization tool to handle **1 billion data points** by employing concurrent queue for parallel processing with **C++11** std::thread and implementing thread pool.
- Reduced data transmission time by **30 seconds** using paging, chunking, and asynchronous loading with Boost library.
- Implemented local pub-sub system adopting **ZeroMQ** in a **C++** backend and **React.js** frontend for serverless desktop application, reducing live streaming requests from 100,000 to 10 per second thereby enhancing UI responsiveness.
- Improved usability in limited network connectivity by integrating offline caching capabilities with Mapbox GL JS and localforage.
- Investigated and resolved over 100 software bugs, ensuring robust software quality assurance. Successfully deployed 5 new features into production while adhering to **Agile** practices to deliver projects within timelines.
- Created automated UI and unit tests applying **Test-Driven Development** to validate application behavior. Performed UI testing across multiple platforms to ensure consistent user experience and compliance with design specifications.
- Served as team's lead for **high-level and low-level design creation**. Reviewed peer code and conducted **technical discussions**, earning recognition for effective issue resolution.

Software Engineer Intern | MathWorks

Jan 2020 - Jun 2020

- Built **Python** APIs to optimize JSON data retrieval by 50%, enhancing real-time traffic management in simulations.
- Automated Docker container testing with Jenkins CI/CD pipeline and pytest to ensure thorough validation and reliable cloud deployments.

Software Engineer Intern | Sayint.ai

Nov 2018 - Mar 2019

- Engineered ETL pipeline with Apache Airflow to process 100K+ emails and 50K+ calls weekly from multiple sources.
- Leveraged **Apache Kafka** for real-time data ingestion and Hadoop with **Apache Spark** for distributed storage and processing, transforming speech data to text with Mycroft, boosting data processing speed by 50% and cutting operational costs by **\$75,000**.
- Built **Flask** based RESTful APIs for text analysis using Azure LUIS and RASA, achieving 90% accuracy, and stored data in **MySQL**.

PROJECTS

- Attendance Management System:** Devised **C++** based end-to-end software for educational labs on **Linux**, featuring participant management, attendance tracking, chatroom, and session timers leveraging **TCP sockets** for real-time interaction.
- Online Code Editor:** Launched scalable online code editor with **Node.js**, **React**, **MongoDB**, **Kubernetes** for high availability.
- Earthquake Safety Mobile App** : Developed real time earthquake alert system with PHP, **JavaScript**, **MySQL**, Android Studio.

SKILLS

Programming/Scripting

C/C++, Python, JavaScript, Node.js, MATLAB, Java, Data Structures, Algorithms, TypeScript, SQL, NoSQL, HTML5/CSS3, Bootstrap, Android

Tools/Frameworks

ReactJS, React Native, Flask, Django, REST APIs, MPI, OpenMP, Docker, Kubernetes, GraphQL, Maven, Gradle, CI/CD, Linux, Terraform, GIT, JIRA, Agile, DevOps, Grafana, Kafka, Hadoop, Spark, Jenkins

Database

PostgreSQL, MongoDB, MySQL, Firebase, Cassandra

Application Environments

IntelliJ, Eclipse, Visual Studio Code, Andriod Studio, Jupyter Notebook

Certifications

AWS Certified Developer Associate, Google Certified Bits and Bytes of **Computer Networking**, Google Certified **Operating Systems** and You: Becoming a Power User