Medha Kalkur

mobile: +1 (385)-472-3997 | email: medhakalkura@gmail.com | website: medhakalkura.github.io | linkedin.com/in/medhakalkur

Education

University of Utah — *Salt Lake City, Utah*
MASTER OF SCIENCE, COMPUTER SCIENCE — *August 2022 – May 2024*

JSS Science and Technology University, Mysore — *Karnataka, India*
BACHELOR OF ENGINEERING, COMPUTER SCIENCE — *August 2016 – May 2020*

Technical Skills

PROGRAMMING	C, C++, C#, Python
ENVIRONMENTS	Visual Studio, Jupyter Notebook, Git, Linux, Qemu
WEB DEVELOPMENT	HTML, CSS, PhP, Javascript
DATABASES	SQL, Vertica, LevelDB
MICROSERVICES	Kubernetes
CLOUD SERVICES	Microsoft Azure

Professional Experience

Graduate Research Assistant — *Salt Lake City, Utah*
UNIVERSITY OF UTAH — *January 2023 – May 2023*

- Implemented a Python prototype to improve the performance of merging sorted lists using machine learning models and concluded that it performed 40% faster than the standard merge.
- Re-engineered and incorporated a Piecewise Linear Regression Model in Google's LevelDB that speeds up the compaction process by 35%.
- Composed a generic K-Vector merge library(merging k-sorted lists into one) that operates 26.5 times better than the original library.

Graduate Teaching Assistant — *Salt Lake City, Utah*
UNIVERSITY OF UTAH — *August 2021 - December 2022*

- Assisted over 50 master students with no prior experience by tutoring them in C++, Java, and data structures, resulting in a 95% successful completion rate of their end-term projects.
- Cultivated an environment of growth and garnered a feedback score of 4.8 on a scale of 5 from the students.

Software Engineer II — *Bengaluru, India*
MICROFOCUS — *February 2022 - June 2022*

Azure Web-hook alert integration to OBM for Common and Non-Common Schema

- Designed and implemented functionality to capture both common and non-common Azure web-hook alerts, processing an average of 5,000 alerts daily and seamlessly transmitted to the OBM UI via REST calls.
- Improved UX by categorizing REST responses into specific alert events, enabling customers to visualize performance scales graphically. Obtained a 27% optimization in performance efficiency compared to the previous implementation.

Software Engineer I — *Bengaluru, India*
MICROFOCUS — *August 2020 - January 2022*

Azure Storage account monitoring and Azure VM Discovery Enhancement

- Streamlined Azure Storage account monitoring by integrating an augmented monitoring framework, leading to a 30% faster migration and successfully adapting existing code to a REST-based data collection framework.
- Resolved a critical showstopper issue related to Azure VM primary DNS discovery conflict, resulting in a 100% resolution rate for the issue and improved system stability.

Optic data lake integration for Management packs

- Built a Custom Metric Ingestion tool that converts agent DB tables to Vertica-readable JSON files, reducing manual entry time by 40%.
- Introduced VSQL queries that amplified data aggregation (hourly, daily) efficiency by 25% and ensured 100% timely processing of late entries.

Software Development Intern — *Bengaluru, India*
MICROFOCUS — *January 2020 - July 2020*

- Spearheaded the Optic DL PoC for the Prometheus Connector, resulting in a 30% boost in data integration and 20% enhanced monitoring capabilities through tailored schemas and BVD creation.
- Created Python scripts using Selenium for Continuous Hours of Operation testing on WebLogic Application Server. Simulated 70% of the application load through login, messaging, profile switch, and logout operations.

Projects

Logging and Recovery

- Elevated system resilience by implementing write-ahead logging (WAL) and checkpointing in a B-epsilon tree key-value store, resulting in a 99.9% data integrity rate and noticeably reduced recovery times after crashes.

Phishing Detection by Machine Learning Models

- Classified URLs as phishing or legitimate using advanced machine learning models, bolstering online safety measures.
- Increased user protection against phishing by attaining an 85.4% accuracy rate using XGBoost on 16 URL features, resulting in strengthened digital security for thousands of users.
- Optimized the algorithm efficiency by prioritizing the top 6 features, resulting in an 84.6% accuracy with Auto-encoder model.

Indian Sign Language Interpreter

- Developed an interpreter using image processing models and CNN to convert Indian Sign Language to English alphabets with audio output.
- Trained on 10,000+ sign images, earned an impressive 85% accuracy rate, and successfully interpreted over 1,000 real-world sign interactions with 95% user satisfaction.