MEDHA KALKUR

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SKILLS

Languages and Middleware: C , C++ , C# , Java , Python , HTML , CSS , PHP , Javascript , Perl, Websphere , Weblogic , JBoss
Databases and Tools: MSSQL , Vertica , LevelDB , PostgreSQL , Git , Docker , Kubernetes , Postman , Qemu , Jenkins
OS and Environments: Linux , Windows , Visual Studio , Jupyter Notebook
Cloud Services and Frameworks: Microsoft Azure , AWS , .NET , Pandas , NumPy , TensorFlow , CUDA , OpenMP

WORK EXPERIENCE

Graduate Research Assistant — Salt Lake City, Utah
University of Utah — *Jan 2023 - May 2023*

- Incorporated a Piecewise Linear Regression Model in Google's LevelDB that speeds up the compaction by 35%.
- Optimized Disk I/O by 21% by implementing multithreading in C++, leading to the PLR models loading faster.
- Composed a generic K-Vector merge library for merging k sorted lists, outperforming standard merge by 1.26x.

Software Engineer 2 — Bengaluru, India
MicroFocus — *Feb 2022 - Jun 2022*

- 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 RESTful API calls.
- Improved UX by categorizing REST responses for alert events, enabling graphical performance visualization. Achieved 27% performance optimization.
- Engaged in cross-functional collaboration to redesign Azure VM discovery, incorporating tag entries to address conflicts in Azure VM primary DNS discovery.
- Mentored 4 new team members through the product, facilitating a swift onboarding process and expediting project initiation by conducting thorough code reviews within the codebase.

Software Engineer 1 — Bengaluru, India
MicroFocus — *Aug 2020 - Jan 2022*

- Streamlined Azure Storage account monitoring by integrating a monitoring framework in C#, leading to a 30% faster migration and adapting existing code to a REST-based data-collection framework.
- Engaged in two interconnected teams to build a Custom Metric Ingestion tool that converts agent DB tables to Vertica-readable JSON files using Python, reducing manual entry time by 40%.
- Packaged over 10,000 JSON files and deployed on Kubernetes cluster, improving data transfer speeds to the Vertica DB via agent metric collector.
- Introduced Vertica SQL queries embedded in Perl for aggregating data ensuring 100% timely processing of late entries.

Software Development Intern — Bengaluru, India
MicroFocus — *Jan 2020 - Jul 2020*

- Spearheaded the Optic Data-Lake PoC for the Prometheus Connector, causing 20% enhanced monitoring capabilities through tailored schemas and Business Value Dashboard (BVD).
- 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 for validation.

EDUCATION

Master of Science in Computer Science — Salt Lake City, Utah
University of Utah — *Aug 2022 - May 2024*

Bachelor of Engineering in Computer Science — Mysore, India
JSS Science and Technology University — *Aug 2016 - May 2020*

PROJECTS

Optimisation of General Matrix Multiplication with OpenMP and CUDA — *Oct 2023 - Dec 2023*

- Optimized GEMM variants using OpenMP for multi-core CPUs, obtaining a 35% efficiency boost.
- Achieved 94% acceleration in GEMM computation speed by implementing shared memory using CUDA in GPUs.

Logging and Recovery — *Aug 2022 - Nov 2022*

- Elevated system resilience by implementing write-ahead logging and checkpointing in a B-epsilon tree key-value store.
- Developed a recovery logic in C++ to replay changes from logs and update the checkpoint index, which resulted in a 18% reduction in recovery time after crashes.