SANTHANAGOPALAN KRISHNAMOORTHY

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EDUCATION

University of Illinois at Chicago Aug. 2021 - May 2023
Masters of Science in Computer Science 2023
Relevant courses: Distributed cloud computing, Operating systems, Multithreaded programming, Neural Networks, High performance computing.

SASTRA University July 2015 - May 2019
Bachelor of Technology in Computer Science and Engineering 2019
Top 10 percentile of class 2019

SKILLS

PROGRAMMING LANGUAGES: Java, Python, C++, JavaScript, Scala, C, Rust
BIG DATA TECHNOLOGIES: Spark, AWS, HDFS, Hive, Docker, Kubernetes, Kafka, Akka
WEB TECHNOLOGY: HTML5, CSS, React, Node, JQuery, REST, gRPC, Django, Express, WordPress
DATABASE: SQLite, MySQL, NoSQL
TOOLS: Jenkins, Docker, Git, Photoshop, Adobe Illustrator

WORK EXPERIENCE

Twitter Inc, *Engineering Intern - Ads Integrity*, Chicago May 2022 - Aug. 2022
- Optimized ad review pipeline of language models by migrating to GCP Vertex AI from on-premise data center, resulting in a 50% cost reduction.
- Enhanced the Ad Reviewing Web Tool by integrating text translation of ad content, enabling agents to efficiently review ads in different languages.
- Improved the Ad Review Web Tool by incorporating an intuitive productivity graph that enables agents to track their performance and progress in real-time.

Neurostellar Private Limited, *Software developer*, Chennai, India Dec. 2020 - July 2021
- Successfully secured a highly sought-after Government of India BIG Grant of 5M INR for groundbreaking research in the field of neurotechnology, laying the foundation for initial development and progress.
- Achieved first place in the Amazon Sambhv Hackathon'21 by developing an efficient prototype, outshining over 2000 competing teams.
- Developed a highly accurate machine learning system for detecting seizures in clinical EEG for the TUH EEG dataset, achieving an impressive sensitivity of 60% with a false alarm rate of 300 per hour.
- Developed a remote EEG reporting app for 10 users using QT widgets and AWS.

Optum Insights Private Limited, *Associate software developer*, Chennai, India July 2019 - July 2020
- Streamlined ETL pipelines for Hadoop HDFS data by leveraging Apache Spark, enabling healthcare providers and payers to analyze market analytics with greater ease and accuracy.
- Slashed runtime of long-running Spark Jobs by 50%, from approximately 24 hours to 10 hours, boosting productivity and efficiency.
- Created an XML-based engine that derives over 20 CMS measures, quantifying the efficacy of healthcare systems and providing key insights for improving patient care.
- Automated the conversion of Hive Schema to SQLite schema using SchemaSpy and Python scripts, resulting in a web interface that is easily accessible to downstream application developers.
- Refactored legacy Spark SQL code to utilize DataFrame API, enhancing code efficiency and maintainability.
- Collaborated with multiple teams, including Triage, QA, UAT, and Support, ensuring smooth operations and effective communication across departments.

PROJECTS

Concurrent Hashtable server-client system Aug. 2022 - Current
- Designed and developed a robust TCP server-client system using Rust, featuring a multi-threaded hash-table with a maximum throughput of 80 MOPS for 84 threads.
- Developed a lock-based hash-table and optimized its performance using state-of-the-art performance tools, achieving SOTA results when measured using Bustle, a universal benchmark for collections.

Log file alert generator Aug. 2021 - Nov. 2021
- Designed and implemented a streaming service that analyzes log file contents, detecting user-defined conditions and issuing alerts to users in real-time.
- Built a Cloudflow application that leverages Akka actor system, Kafka streams, and Spark streaming to analyze log file contents as streams, delivering timely insights to users.
- Deployed the application as a Docker image in AWS EKS Kubernetes service, ensuring seamless scalability and reliability.

Log file stats generator Aug. 2021 - Nov. 2021
- Built a REST endpoint in AWS API Gateway to analyze log files and generate useful statistics, providing valuable insights into application performance and usage.
- Configured an EC2 instance with a cron job that updates an S3 bucket with newly generated log files, ensuring that the analysis performed by the Lambda function remains current and accurate.
- Deployed an AWS Lambda function to compute statistics from log files stored in S3, enabling efficient and scalable analysis of large volumes of data.
- Developed a REST client in Scala using the Akka framework to test the AWS API endpoint, ensuring that the endpoint functions as intended and providing a robust testing tool for future development.