Suryadev Sahadevan Rajesh

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Graduate Student in Computer Science at the University of Wisconsin-Madison.
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EDUCATION

University of Wisconsin - Madison *August 2019 - May 2021 (Expected)*
MS in Computer Sciences
Focusing on research projects in in-memory columnar databases and computer systems courses.

College of Engineering, Guindy - Anna University, Chennai, India *August 2012 - May 2016*
B.E in Computer Science and Engineering, CGPA - 9.61/10.0
Graduated with 3rd rank in the CS Department. (~210 students).

EXPERIENCE

University of Wisconsin-Madison, Madison, Wisconsin | *Graduate Research Assistant* *August 2020 - Present*
Database Research advised by Prof. Jignesh Patel. Currently, working on improving performance in a columnar database. **Technology:** C++

Facebook | *Software Engineer Intern* *May 2020 - August 2020*
Business Interfaces - Advertiser Support Products team. **Technology:** Hack, React.

University of Wisconsin-Madison, Madison, Wisconsin | *Teaching Assistant* *Jan 2020 - May 2020*
CS 400 Programming III (Java and Data Structures programming)
My duties include helping students during lab hours with their programming assignments and grading their assignments.

PayPal, Chennai, India | *Software Engineer* *July 2016 – July 2019*
Worked in logging platform for PayPal, and it handled 7 trillion messages per day (~1PB)

- Improved the log tracing and indexing service to make it deploy-able in resource constrained environments.
- Built a tool to query logs in the hadoop distributed filesystem without the need to write MapReduce jobs or pig script.
- Developed an efficient log-scanner with minimal overhead to scan for the presence of large sets of patterns in the logs during ingestion.
- Built a prototype for modeling the service calls between micro-services of transactions as a graph for root cause analysis.

Promoted to SE - 2 in July 2018. **Technology:** Java, Apache Hadoop, Apache Kafka, Apache Pig.

Morgan Stanley, Mumbai, India | *Technology Analyst Intern* *May 2015 - July 2015*
Worked in Investment Management - IT team Collaborated to re-platform a legacy proxy-voting application to model-view-controller architecture. **Technology:** JavaScript.

SKILLS

Programming - JAVA, Python, C++, C, Rust, HTML, CSS, Javascript, AngularJS. Linux

Technologies - Apache Hadoop, Apache Pig, Apache Spark, Apache Kafka, Apache Cassandra, TensorFlow, Android Studio, MySQL, Oracle, Tomcat, Git

PROJECTS

Image Compression for Computer Vision Systems

Built a image compression pipeline by retaining only the semantically important information for the target computer vision system. Depth based approach was used to identify the semantically important region. We are able to achieve 20% savings on image file size and our chosen computer vision system EAST able to detect the information in the compressed image with the accuracy of 84%. **Technology:** Python.

Performance analysis of BitWeaving Implementation in Rust

Implemented the BitWeaving (SIGMOD'13) in Rust and compared its performance with the naive scan and its original implementation C++. In this project, we also used 128 bit SIMD instructions to improve and study its performance. We are able to scan each element in the list at the average cost of 2 CPU cycles per value. **Technology:** Rust.

Music Recommender System using Multi-Node Hadoop Cluster

A hybrid method for recommending songs from the dataset in the hdfs to overcome some of the disadvantages of filtering techniques when used in isolation was used. For content-based filtering, K-means clustering was used to cluster the songs and Pearson correlation coefficient for collaboration-based filtering to find the similarity among users. **Technology:** Java, Hadoop.

A single-node durable key-value store

We implemented a simple key-value store with skip list as the in-memory store and log-structured merge trees to store the data in the disk. The write-ahead logging was used to keep the data durable. **Technology:** C++.

AWARDS

Key Talent Award - PayPal - Based on contributions made in the year 2018 - 2019.

First Prize in Onsite Programming Contest (Abacus '14) - Conducted by CSEA - College of Engineering, Guindy, Mar 2014.

National Talent Search Scholar - It is awarded to 1000 students each year across India based on scholastic and mental ability tests.