SAIHARSHITH KARUNEEGAR RAMESH

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Education

MASTER OF COMPUTER SCIENCE **December 2023**
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN | GPA : **4.0**/4.0 Illinois, USA
Graduate Research Assistant @ NCSA | Graduate Teaching Assistant @ CS 222

BACHELOR OF ENGINEERING IN COMPUTER SCIENCE **May 2021**
ANNA UNIVERSITY | GPA : **9.54**/10.0 Chennai, India
Vice President @ Know-I Research Club | Joint Secretary @ The Association of Computer Engineers

Technical Skills

Languages C++ | Java | JavaScript | TypeScript | SQL | Python | HTML | CSS
Technologies / Frameworks Spring Boot | Node.js | Express | MongoDB | MySQL | React.js | Git | Perforce | AWS | Docker

Experience

SOFTWARE ENGINEER II @ CADENCE DESIGN SYSTEMS **Feb 2024 - Present**
C++ | Perforce | Data Structures and Algorithms San Jose, USA

- Developed an algorithm to optimize customer designs, **reducing the number of SLR crossings** by over **90%**, significantly **improving Compile and Place & Route (P&R)** timings.
- Collaborated on optimizing the **step count of the designs** by strategically grouping and increasing the frequencies of fast and slow clock domains. This led to a **reduction** in the step count ranging from **10% to 80%** across various designs.
- Integrated Static Timing Analysis (STA) API libraries to calculate the net and cell delays of the designs, resulting in a **10-15% reduction in compile time**.

SOFTWARE ENGINEER @ FRESHWORKS **Feb 2021 – April 2022**
Java | MySQL | Spring Boot | Apache Kafka | AWS | Redis | REST APIs Chennai, India

- Spearheaded the transition from a monolithic architecture to a **microservices**-based system for Freshworks CRM, **reducing network traffic** overload by **40%** and enhancing system performance and reliability.
- Led an initiative to **improve email deliverability**, cutting the spam score by **50%** and enhancing the sign-up process, leading to a better user experience.
- Streamlined sign-up request processing, **reducing processing time** by **30%**, and implemented an **asynchronous** sign-up callback process to boost responsiveness and resource utilization.
- Increased email deliverability metrics by 40% through the introduction of **de-duplication algorithms**, leveraging **Redis Cache** for optimal data management.
- Collaborated to deliver a **new landing page feature** for the Freshsales product within a tight 2-day deadline, meeting customer requirements efficiently.
- Improved build efficiency by upgrading the **Gradle** build tool, reducing build time from **13 to 8 minutes**.

MACHINE LEARNING PROJECT TRAINEE @ CADENCE DESIGN SYSTEMS **May 2019 - June 2019**
Python | MySQL Bengaluru, India

- Collaborated with an agile team to refine machine learning algorithms, emphasizing advanced data preprocessing like normalization and feature engineering, enhancing model robustness.
- Employed three ensemble learning methodologies, integrating predictions from eight models, boosting predictive accuracy by **23%**.

Academic Projects

GITHUB OPEN SOURCE CONTRIBUTIONS
Java | Git

- Detected Bugs: 30 | Resolved Bugs: 28 | Acceptance Rate: 100%
- Notable Repositories: google/guice, apache/commons-lang, manifold-systems/manifold, stleary/JSON-java

TAG-ME-IN
React.js | Node.js | MySQL

- Developed a **Carpooling application** for University of Illinois students, allowing them to find and join rides with similar destinations.
- Tag-Me-In Github Repository

APPLICATION OF RANDOM FORESTS FOR AIR QUALITY ESTIMATION IN INDIA BY ADOPTING TERRAIN FEATURES
Python | Pandas

- Built a regression model to predict the **Air Quality Index (AQI) of Indian cities** using terrain features, achieving **81%** accuracy.
- Published on IEEE explore