

SOURAB BAVIKATTE RAVI

Software Engineer (System Software, Web Development, Cloud Computing)

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EDUCATION

University of Southern California, *Master of Science in Computer Science*

AUG 2022 - MAY 2024

Coursework: Analysis of Algorithms, Database Systems, Operating Systems, Web Technologies, Scientific Computing,

GPA: 3.92

Advanced Game Development

TECHNICAL SKILLS

Languages & Frameworks: C, C++, Python, Kotlin, Java, JavaScript, TypeScript, Bash, MPI, OpenMP, OpenGL, CUDA

Web Development: Node.js, React.js, Flask, JQuery, HTML, CSS, Bootstrap, Nginx, SQL, MongoDB

Tools & Technologies: Git, Docker, AWS, GCP, GDB, Lex, Yacc, Jenkins, JIRA

Skill Sets: System Programming, Full-Stack Web Development, Cloud Computing, Object Oriented Programming, Multi-threading, Parallel Computing, Serverless Computing, Agile Methodology

WORK EXPERIENCE

AMAZON, USA | Software Development Engineer Intern

MAY 2023 - AUG 2023

- Designed a **distributed and parallel** performance analyzer capable of generating **52,000 requests/minute** across multiple API endpoints.
- Examined **15+ APIs**, dependent services, and infrastructure stability for scalability; established CloudWatch monitoring stack and alarms with **20+ metrics** to gain performance insights.
- Tech Stack: **Java, Kotlin, TypeScript, CDK, TestNG, Git, AWS**

TALLY SOLUTIONS, India | Software Development Engineer 2

JUL 2019 - JUL 2022

- Devised a **scalable containerized software** as a service solution to run Windows applications over the Wine environment on a **cloud Linux VM**, utilized by 10000+ users.
- Introduced **real-time** folder permissions sharing using **access control lists** to provide instant data control to users with latency under **500ms**.
- Established **caching mechanisms** and **dependency accumulation** to lower IO reads from DB, decreasing application startup time by **16%**.
- Reduced external fragmentation in application **memory manager** by introducing coalescing mechanism for variable block size pools, resulting in **20% reduction** of run-time memory allocation from OS.
- Tech Stack: **C, C++, Python, Bash, Docker, Win32, Git, AWS**

SKILLMITHRA LLP, India | Full Stack Web Developer Intern

JAN 2019 - JUN 2019

- Developed a **scalable middleware server** and **REST APIs** for a coding platform, supporting 5 programming languages.
- Deployed **React** based web application for resume builder, incorporating real-time review, spell check, version control, and exportable in 2 formats: pdf and doc, leveraged by 2000+ users.
- Collaborated and led a team of 4 junior interns to design platform architecture, APIs, and **cross-domain user authentication**.
- Tech Stack: **Node.js, Express.js, MongoDB, JavaScript, React.js**

PROJECTS

Multi-platform Event Discovery Application - *React.js, Android, Node.js*

APR 2023

- Created single-page **React** web and native **Android** app for convenient event search and to aggregate events, venues, and artist details using Ticketmaster, Spotify, and Google Maps APIs.
- Incorporated **lazy loading** of 10 results at once, ensuring seamless user experience; crafted **REST APIs** using **Node.js**, deployed on GCP.

Weenix Kernel Development - *Unix kernel, Operating Systems*

APR 2023

- Iteratively developed Weenix kernel, incorporating **process/thread management** and synchronization for phase 1.
- Built **virtual file system**, enabling file/directory operations for phase 2; implemented **fork system call** and **virtual memory** for user space process creation for phase 3.

Token Bucket Traffic Shaper - *C, multi-threading*

FEB 2023

- Implemented **multi-threaded** Linux application to emulate **traffic shaper** for packet transmission/servicing controlled by token bucket filter.
- Enforced **thread safety** of wait & server queue for packet/token generator and 2 server threads via **pthread mutex & condition variables**.

HONORS & AWARDS

- Collaboration Excellence Award** for exceptional collaboration across 5 cross-functional teams to release TallyPrime on AWS. **MAY 2022**
- Star of the Quarter** for 1.2x times performance improvement of TallyPrime on AWS. **APR 2022**
- Rising Star Award** for contributions to system layer in simplifying software launch time by 16%. **APR 2021**

LEADERSHIP & INVOLVEMENT

- Instructed a team of 60 new hires on principles of computing and effective debugging techniques at Tally Solutions Private Limited.
- Acted as the Technical Head of the Information Science department at DSCE for 2 years, maintained intra-departmental applications and co-organized technical events.