

ASUTOSH KARANAM

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EDUCATION :

MS Computer Engineering (Computer Science)

Arizona State University, Tempe, USA.

JAN 2023 - DEC 2024 (Exp.)

CGPA: 3.89/4

Relevant Coursework: Foundations of Algorithms, Mobile Computing, Data Processing at Scale, Probability and Statistics.

TECHNICAL SKILLS :

Programming: C/C++, Python, Java, HTML 5, CSS 3, ES6 JavaScript, SQL, Node.JS, React

Databases: PostgreSQL, MySQL, MongoDB

Tools and Frameworks: Git, GDB, pgAdmin, Postman, Android Studio

OSS Libraries: NumPy, Pandas, Protobuf, MsgPack, cJSON, Hostap-WPA Supplicant

Build Frameworks: Yocto, CMake

EXPERIENCE :

Student Worker 4, Solutions Engineering | EdPlus at Arizona State University - Scottsdale, AZ

APR 2023 - Present

- **ASU Online | HTML, CSS, Node.JS, Cypress**

Developed a software suite that validates multiple Web Apps on the ASU Online website such as Tuition Fee Calculator, Request for Information Form, Chat-Bot. Piloted the development of an HTML report generation and emailing framework in Node.js, ***completely freeing up engineers to focus on strategic work.***

- **ASU Orchard | HTML, CSS, PHP, Behat, Drupal**

Led the effort of building the entire software suite to automate the verification of Course Search Functionality, Role based Access control and specially delegated user access permissions to the educational content hosted on the web service.

Achieved a ***90% reduction in manual debugging effort.***

Engineer 2, Product Software Engineering | Comcast – Chennai, India

JAN 2019 - DEC 2022

- **WebConfig | C/C++, MsgPack, JSON, Protobuf**

Developed and maintained an application that bridges XFi Cloud and the customer device to apply the user-set Wi-Fi settings. Parsed cloud-sent msgPack and Protobuf data, and transacted with the device's Wi-Fi manager app. Designed as a wrapper on a common configuration queue to process server config requests sequentially.

- **App Debug Framework | C++, Yocto**

Implemented a debugging App that inspects native applications of the product. It features a friendly CLI to retrieve runtime diagnostics data of multiple Apps using a sophisticated IPC Bus mechanism. It's designed for developers, QA and Field Engineers and resulted in a ***great reduction of manual debugging effort by 40%.***

- **Passpoint | C/C++, JSON**

Developed and maintained entire multi-threaded software application which highlights a packet processing engine implemented using several data structures. It's built following an SDN model to record and respond to the client queries over Unix sockets. Timed thread signaling mechanisms were also employed to achieve synchronization.

- **HAL 3.0 | C/C++**

Developed the 3.0 version of the device level API abstraction layer of RDK-B Software, resulting in enhanced system performance and configurability. Conducted extensive optimizations through supporting bulk configurations, leading to ***substantial improvements in both speed and ease of configuration.***

ACADEMIC PROJECTS :

- **Health Monitor | Java, Kotlin, SQL, Android**

Implemented a Mobile App for users to measure Heart Rate, Respiratory Rate and log disease symptoms leveraging the Camera and Accelerometer Sensor modules.

- **Monte Carlo Simulation of 20-Deck Poker Hands | Python, NumPy**

Built a program to compute Monte Carlo simulation estimates of the probabilities of poker hands from a deck of 20 cards. Also, I compared generated estimates to actual probabilities calculated analytically, and reported results of the analysis. I also discussed relationship between the number of simulations (N) and accuracy of the estimates.

RESEARCH WORK :

- **Evaluating Machine Learning models to detect DDoS Attacks in Cloud Systems**

Proposed a research report on using machine learning and deep learning algorithms to detect DDoS attacks in cloud systems. Discussed inadequacies of traditional methods and assessed the effectiveness of alternate approaches utilizing ML. Also, proposed a new hybrid methodology for detecting DDoS attacks in cloud systems.

AWARDS AND ACHIEVEMENTS:

- Laurellled with accolades namely "YOU NAILED IT!" and "CHAMP-Pinnacle" by Comcast for being the stand-out performer in 2021 and 2022 respectively.
- Was a Tutor at SASTRA University and taught Quantitative Aptitude and Computer Programming to peer students.