Krishnakumar Muthukrishnan

Software Developer

krishna.com | github | LinkedIn | kmuthukr@buffalo.edu | +1 7169032874

EXPERIENCE

IT ANALYST | ALCATEL-LUCENT ENTERPRISES

July 2018 – May 2021 | Chennai, India

- ➔ Developed sophisticated telephony applications for Alcatel-Lucent Enterprise (ALE) PABX systems using C++ in Agile environment.
- ➔ Implemented the Ale IPv4 <-> IPv6 Signaling Translator using C++ data structures and libraries, enabling effective translation between the two protocols. Utilized network programming skills to ensure seamless integration and support for growing demands for IP-based services and connected devices.
- ➔ Integrated encryption capabilities utilizing OpenSSL library into the Alcatel-Lucent Enterprise (ALE) PABX system, adding an extra layer of security to the existing solution and catering to the demands of mission-critical customers, such as the French and Indian Armies, resulting in a **10% increase in sales revenue**.
- ➔ Optimized performance and memory usage of C++ code for encrypted Call Server
- ➔ Assisted in migrating ALE legacy PABX to cloud-based solution leveraging Docker to containerize the PABX applications and utilized AWS for cloud infrastructure deployment, delivering increased agility, scalability, and cost savings while ensuring seamless communication between PABX apps and the cloud using network programming skills.

SOFTWARE DEVELOPER | ALCATEL-LUCENT ENTERPRISES

July 2015 – June 2018 | Chennai, India

- ➔ Integrated ALE PABX with Rainbow suite using C++ & Rainbow API, resulting in improved user experience and increased adoption.
- ➔ Utilized network programming techniques and socket programming for seamless communication between systems.
- ➔ Designed a Python API for capturing memory data, **reducing debugging time**, and **Reduced 600 billable man-hours** annually by automating the firmware production process using CI/CD tools, streamlining the workflow.

ACADEMIC PROJECTS

NUMBER CRUNCHING - HIGH PERFORMANCE PARALLEL AND DISTRIBUTED COMPUTING | C++ | PYTHON | CCR @ UNIVERSITY OF BUFFALO | YEAR-2021

- ➔ **Distributed Sorting:** Implemented count sort on range of short integers distributed across a set of processors in a cluster using Open MPI.
- ➔ **Gaussian KDE:** Parallel implementation of gaussian kernel density computation for a set of floating-point numbers using NVIDIA CUDA.
- ➔ **Rooting Graph Nodes:** Used Apache Spark to find the roots of each node in a graph of connected components.

LUCID-VENDING | REACT-NATIVE #STRIPE GATEWAY | FIREBASE | YEAR-2022

- ➔ Under the guidance of Dr. Ramalingam Sridhar, designed and developed a project for a third-party client for facilitating on-the-go payments for vending machines.
- ➔ The project included the creation of a dedicated mobile app for both Android and IOS platforms and a Raspberry Pi motherboard that served as a payment scanning function and a two-way transceiver.
- ➔ This motherboard was designed to scan QR codes and facilitate e-payments through e-wallets, with the integration of STRIPE payment gateway libraries and React-Native technology.

SKILLS

PROGRAMMING

Proficient:
C++ • C • Python
SQL • CSS • HTML • Shell

Experienced:
Python • C • **C++**

Familiar:
Java • Solidity • React-Native

LIBRARIES/FRAMEWORKS

STL • BOOST • POCO • REST • OCCI • MVC • Django • PySpark • NumPy • OpenMP • OpenMPI • Node.js • Jekyll • React

PROTOCOLS

TCP/IP • UDP • FTP • SCP • HTTP/HTTPS • SNMP • DHCP • TLS/SSL • DTLS • RTP

TOOLS/PLATFORMS

AWS • gdb • Git • Mercurial • clearcase • Jenkins • PuTTY • WinSCP • Wireshark • JIRA • Android Studio • VMware Esxi • KVM Manager • Klockwork Analyzer • Docker • VScode • valgrind • Heroku • Docker

EDUCATION

UNIVERSITY OF BUFFALO

MASTER'S IN COMPUTER SCIENCE
Aug 2021 - Dec 2022 | Buffalo, New York
Cum. GPA: 3.33 / 4.0

ANNA UNIVERSITY

BACHELOR'S IN ENGINEERING - INFORMATION TECHNOLOGY
May 2015 | Chennai, India
Cum. GPA: 3.33 / 4.0