Krishnakumar Muthukrishnan

Software Developer

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

Experience

IT ANALYST | Alcatel-Lucent Enterprises

July 2019 – May 2021 | Chennai, India

- ➔ Performance/memory optimization over the legacy C++ code to achieve maximum CPU throughput under a single encrypted Call Server.
- ➔ Catered to mission critical target customers (including the French and the Indian Army) with an increased reputation and **sales revenue upto 10%**
- ➔ Migrated the legacy PABX system to cloud infra with the application of AWS Services.
- ➔ This **enabled ALE to offer public and private cloud solutions** as either fully cloud-based or hybrid competing directly with Cisco's Unified solution.
- ➔ Linux machine provisioning with bash startup scripts (for bare metal appliance servers) solution launching the virtual Media Server applications.
- ➔ **Reduced the dependency of hardware** based media servers for audio/video compression and also enabling remote installation and maintenance.

SOFTWARE DEVELOPER | Alcatel-Lucent Enterprises

July 2015 – June 2019 | Chennai, India

- ➔ Developed backend telephony C++ applications for Alcatel-Lucent Enterprise (ALE) PABX systems within an Agile development process.
- ➔ Designed a Python API's to dump the memory in the processor at the failure point which potentially **saved several man-hours of debugging.**
- ➔ Automation of Firmware binaries production process applying the CI/CD tools - Jenkins, Jira and Docker registry/daemon resulting in the **reduction of 600 billable man-hours annually.**
- ➔ Designed a IPv4 ↔ IPv6 signaling translator for PABX system's Call Server to communicate with IPv6 end-points and vice-versa.
- ➔ This ensured the legacy ALE PABX communication ecosystem has a spot among the top players in **global Internet Protocol Version 6 marketplace.**

Academic Projects

NUMBER CRUNCHING - HIGH PERFORMANCE PARALLEL AND DISTRIBUTED COMPUTING | C++ | Python | CCR @ University of Buffalo | year-2021

- ➔ **Distributed Sorting**:Implements 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**: Using Apache Spark find the roots of each node in a graph of connected components.

LUCID-VENDING | React-Native #Stripe gateway | Firebase | year-2022

- ➔ Worked under the advise of Dr Ramalingam Sridhar to design and develop: a Project for a third-party client with
  - * A Dedicated app (Android and IOS) - to make seamless **on-the-go payments for vending machine.**
  - * A Raspberry Pi motherboard integrating the payment scanning function and acting as a two way transceiver to **scan the QR code and continue paying it through e-payments** with the e-wallets configured with the STRIPE payment gateway libraries of React-Native.

Skills

PROGRAMMING

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

Experienced:
Python • C • **C++**

Familiar:
Java • Solidity • React-Native • Assembly

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