Amogh Madanayakanahalli Kumar

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EDUCATION

- **University of California, Santa Cruz** (Current)
  - Master of Science in Computer Science and Engineering (GPA: 4 / 4)   *(Sep 2022 - Mar 2024 (Expected))*
- **PES University, Bengaluru, India**
  - Bachelor of Technology in Electronics and Communication Engineering (GPA: 9.37 / 10)   *(Aug 2015 - May 2019)*
  - Minors in Computer Science and Engineering (GPA: 9.6 / 10)   *(Aug 2016 - May 2018)*

Relevant Coursework and Self-study: Computer Networks, Operating Systems, Computer Architecture, Compiler Design,
Data Structures and Algorithms, Distributed and Parallel Computing.

TECHNICAL SKILLS

- **Programming Languages :** C, Python, Java, Perl, Golang, C++, JavaScript, Shell Script
- **Database Management Systems :** MongoDB, MySQL, SQLite, PostgreSQL
- **Web Development :** Node.js, AngularJs, Vue.js, React, HTML, CSS, JQuery, Nginx
- **Tools/Frameworks :** Git, Docker, Flask, REST APIs, GraphQL, Visual Studio Code, Wireshark
- **Others :** Full Stack Development, Object Oriented Programming, Debugging, Multi-threading, Socket Programming, Packet Tracing and Analysis, System Kernel Programming, Virtualization, AWS, Azure, Agile Methodologies

WORK EXPERIENCE   *(3+ years)*

- **Nutanix, San Jose, CA**
  - **Software Defined Network Engineering Intern**   *(Jun 2023 - Sep 2023)*
    * Enhanced intra-PC layer2 connectivity between subnets with OVN's L2gateway port, replacing the VXLAN tunneling approach. This streamlined configuration and setup, reduced resources required, boosted throughput by 1000%, and cut latency to 1/4th, significantly improving migration scalability.
- **Citrix R&D, Bengaluru, India**
  - **Software Development Engineer - Level 2**   *(Mar 2021 - Sep 2022)*
    * Developed a feature to monitor health of internet links and consequently backhaul critical application traffic via stable MPLS links instead of direct breakout to internet upon detection of significant degradation (default of 1s latency or 10% loss).
    * Devised an infrastructure to automatically push SaaS application signatures for traffic classification onto Citrix SD-WAN (Software-Defined Wide Area Network) appliances from Citrix SD-WAN Orchestrator service on cloud. This enabled updating of the signatures on the appliances within 24 hours in opposition to requiring a new release.
    * Research on integration of Citrix SD-WAN with Citrix ITM (Intelligent Traffic Management) for intelligent wan-link path selection for optimal delivery of internet-bound SaaS application traffic.
    * Live environment analysis, debugging and resolution of 20+ critical customer issues.
  - **Software Development Engineer - Level 1**   *(Jul 2019 - Feb 2021)*
    * Classification and Optimization of Citrix Managed Desktops traffic and Web proxy traffic passing via Citrix Gateway Service.
    * Added enhancement of IPv6 support for DNS parsing and proxying features as well as first packet classification in Citrix SD-WAN for routing of Office365 and other SaaS application traffic.
    * Lead a team of 4 to design and develop an infrastructure to create on-demand Citrix SD-WAN networks in private cloud (OpenStack) and configure the same via SD-WAN Orchestrator on the basis of a digitally visualized network topology.
  - **Software Engineering Intern**   *(Jan 2019 - Jun 2019)*
    * Designed and created Behavioral Driven Development (BDD) validation framework for Citrix SD-WAN Orchestrator. The framework provided a solid base for the product's Automation and helped to offload the majority of the manual testing.

PATENT

- **US 17/841,135** - An optimal way to store multiple copies of files in local PoPs.   *(Filed - Jun 15, 2022)*

ACADEMIC PROJECTS

- **UCSC ELVES Lab:** Explored Pastry and Scribe in distributed systems to strategically partition computations, distribute tasks across nodes and aggregate the results to achieve an efficient and cost-effective processing for GNNs (Graph Neural Networks).
- Researched and proposed secure biometric data storage via Blockchain for distributed registration and access systems. Implemented a Kerberos authentication proof of concept for validating transactions and data retrieval from ledgers at access points.

PROFESSIONAL DEVELOPMENT CERTIFICATIONS

- AWS Partner: AWS Cloud Practitioner Essentials.   *(Aug 2022)*
- Citrix certified security track - Level 5 - Purple Belt in "Secure Cloud Development".   *(Mar 2019 - Aug 2021)*
- Citrix Learning Center course on "Docker with Kubernetes".   *(Dec 2019)*
- Coursera certified course on "Machine Learning" offered by Stanford University.   *(Jun 2017 - Aug 2017)*