AKASH KUNNATH MANI

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EDUCATION

State University of New York at Stony Brook Stony Brook, NY, United States
Master of Science - Computer Science *Aug. 2024 - Present*
Relevant Coursework *Computer Architecture, Analysis of Algorithms, Data Science Fundamentals*

National Institute of Technology, Trichy Tiruchirappalli, TN, India
Bachelor of Technology with Distinction - Computer Science Engineering, CGPA: 8.9/10 *Jul. 2017 - May 2021*
Relevant Coursework *Data Structures and Algorithms, Operating Systems, Data Communication and Networks, Computer Organisation, Database Management Systems*
Undergraduate Thesis *Detection and Classification of DDoS attacks using Machine Learning Techniques*

WORK EXPERIENCE

Cisco Systems Bangalore, KA, India
Software Engineer II *Aug. 2022 - Aug. 2024*
- Owned the development of several access-control list (ACL) and control plane policing (CoPP) features for the Linux-based Cisco NX-OS data center operating system.
- Played a pivotal role in the software bring-up of ACL/CoPP features in a new 400G-bandwidth Cisco Nexus data center platform.
- Led cross-functional efforts to enhance code quality and performance of Python-based automation frameworks, leading to a 25% reduction in development testing time.

Software Engineer I *Aug. 2021 - Aug. 2022*
- Developed and maintained ACL, CoPP, and model-driven programmability features for Cisco NX-OS.
- Diagnosed and resolved critical internal and customer-found issues in Cisco Nexus 9K/7K/3K switches.

Software Engineer Intern *May 2020 - Jun. 2020*
- Created a Python-based tool to generate stateful traffic streams for over 30 control-plane protocols using the Scapy packet manipulation library.
- Successfully presented and deployed the tool to Cisco's development and QA teams, enhancing the testing of control-plane policing (CoPP) features in the Cisco NX-OS operating system.

Applozic, Inc. Bangalore, KA, India
Developer Evangelist Intern *Apr. 2021 - Jul. 2021*
- Enhanced product documentation and created code walkthrough blogs and videos for Applozic's chat API products.
- Collaborated with product, marketing, and engineering teams to expand Applozic's presence among developers.

Bharat Heavy Electricals Limited Tiruchirappalli, TN, India
Research Assistant *Dec. 2019 - May 2020*
- Participated in an academic-industrial research study under Prof. M. Sridevi, NIT Trichy to establish comprehensive design guidelines for implementing a real-time CAN network in an electric bus.
- Presented a prototype simulation of the CAN SAE J1939 network using open-source Busmaster software.

PROJECTS

Computer Architecture - RV64IM processor | *SystemVerilog* Fall 2024
- Implemented a functional 5-stage RISC-V processor with set-associative cache, supporting load/stores and ECALL instructions with pipeline flush over AXI4 bus communication protocol.

Client-Server File Synchronization Tool | *C++* Summer 2024
- Employed a multi-threaded approach to handle multiple client connections concurrently, process incoming synchronization requests and maintain a synchronized client-server directory using Winsock API.

TECHNICAL SKILLS

Languages: C, C++, Python, Bash, HTML/CSS, JavaScript
Tools: Git, Azure ML Studio, Android Studio, VS Code, GDB
Libraries: Pandas, NumPy, Matplotlib, Scapy
Concepts: High-Performance Computing, Low-Latency Systems, Algorithm Optimization, Software Engineering, Network Switching, Linux System Programming, Agile Methodologies, Machine Learning