AJAY V HEGDE

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EDUCATION

MS in Computer Science, Stony Brook University — August 2022 - 2024 (Expected)
Relevant Coursework: Distributed Systems, Analysis of Algorithms.

B.Tech in Computer Science, Manipal Institute of Technology — (CGPA: 8.63/10) July 2015 - July 2019
Relevant Coursework: Data Structures, Algorithms, Software Engineering, Computer Networks, Operating Systems, Distributed Systems, Information Security

EXPERIENCE

Senior Software Development Engineer, Software Tools — Mar 2021 - July 2022
Western Digital — *Bengaluru, India*

- Developed a **C++ middleware framework (in a team of 5)** utilized by global firmware and device validation teams **(for a team of 50+)** for controller and firmware validation. Exposed APIs and features through Boost Python wrappers.
- Solely responsible for features like **SD Command Queue, Secure Firmware download and SD Host Log**. Completed critical features such as **model simulation support, data tracking and diverse tools integration**.
- Pioneered a **novel solution** for command queue creation, generic to various storage protocols, resulting in reduction of 500+ lines of code.
- The Validation teams were able to **identify and fix 30+ bugs** using the framework, before Firmware Release.
- **Submitted an innovation** to utilize wasted heat in various storage products to delay device throttling and sustain performance for a longer duration.
- Received **We-Collaborate, We-Are-Customer-Centric, and We-Deliver-Excellence** awards in the organization.

Engineer, Firmware Engineering, Enterprise SSD — Jan 2019 - Feb 2021
Western Digital — *Bengaluru, India*

- Designed and integrated Firmware hooks to simulate and speed up Firmware behaviour and scenarios
- Spearheaded TCG storage SIIS validation and enhanced existing security validation libraries. Contributed to power failure and error injection scenarios for Flash Translation Layer modules on **NVMe based Zoned Namespace SSDs**.
- Implemented **175+ tests and achieved 95% feature, 70% end to end functional** test coverages for the Internal File System module. Expedited bug resolution and recommended efficient coding guidelines **reducing 60%** of script issues.

Research & Development Intern — May 2018 - July 2018
ADVA Optical Networking — *Bengaluru, India*

- Devised SNMP trap receiver and system log collector tools for the Ensemble solution at ADVA for the in-house OpenDaylight-based SDN controller. This reduced turnaround time to root cause bugs **from 7-10 days to 3-4 hours**.
- Boosted **Performance by 20%** through a multithreaded asynchronous wrapper implemented over the synchronous SNMP trap.
- Technologies used: Java, Eclipse IDE, Karaf, Maven, Postman, YANG, Opendaylight.

PROJECTS

HTTP Client

- Created an HTTP client library with support for all HTTP methods using Golang.
- Customized timing configurations to overcome infinite timeout in Go's default HTTP client and enhanced multiple request handling through go routines.

Peer to Peer Secure File Sharing Application

- Designed and developed a secure P2P file sharing application in python to share files in an intranet
- Analyzed the performance impacts of security overheads and increase in peers.

SKILLS

Languages: C++, Python, C, Golang
Tools/ Debuggers: Visual Studio, VS Code, STL, Git, Windbg, LateX, Jira
Protocols: NVMe, SD, TCG storage