AAVAR KHATIWODA

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Falls Church, VA | Active Secret Clearance

SUMMARY

*Versatile software engineer with **over 5 years** of experience in professional full stack software development. Committed to **mastering a diverse range of tools** to drive team and product success. Proven track record of enhancing existing codebases and **delivering impactful solutions**, demonstrating a wide array of technical skills and a commitment to continuous learning.*

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, C++, C, Bash, RISC-V Assembly
Frameworks and Tools: ReactJS, JSX, Sass, Jenkins, Jira, Vim, Terminal, Linux / Red Hat Enterprise Linux, Virtual Machines
Operating Systems & Memory: Job Control Shells, Fork-Join Threadpool, 64-bit Dynamic Storage Allocators, Multimedia Web and Video Server, Random-Access Decompression and Compression Techniques in Memory

PROFESSIONAL HISTORY

Lockheed Martin ***May 2024 - Present***
Level I Software Engineer *Manassas, VA*

- Develop, implement, and maintain new scalable codebase architecture and facilitate refactorization of old tools to continuously enhance existing internal cross-platform and federal client applications.
- Streamline data capture and export processes of automated classified/unclassified system logs and manual user-requested data to enhance analysis of critical system information and provide impactful solutions to potentially failing services.
- Preserve 10+ years of team's critical workflow documentation by automating the migration of 160+ wikis from Redmine to GitLab through new scripts, avoiding error-prone manual workarounds.
- Enhance networking infrastructure by standardizing outdated hostnaming paradigms across key systems into a modern notation.
- Deliver improved high-impact scripting design guidelines to help engineers ensure uniformity and scalability in coding design practices.

Northrop Grumman ***Jun 2023 - Aug 2023***
Software Engineer Intern *Baltimore, MD*

- Enhanced Jenkins CI/CD pipelines through developing new health monitoring tools to better diagnose and prevent build failures before reaching critical stages, implementing health monitoring diagnostic filters on OpenSearch Dashboards.
- Increased efficiency of Jenkins pipeline data collection scripts to yield a -20% time overhead in the data collection process.

RESEARCH

Virginia Tech**, College of Engineering* ***Jan 2024 - May 2024
Undergraduate Research Assistant, CS4994 - Undergraduate Research *Blacksburg, VA*

- Designed a novel three-step algorithm to resolve memory bandwidth limitations of traditional compression techniques, improving random-access decompression across four diverse memory dumps.
- Outperformed the DEFLATE algorithm in compression performance across each tested memory dump.

LEADERSHIP

CS OpenSource at Virginia Tech**, Career Development Resources* ***Jan 2024 - May 2024
Founding Vice President *Blacksburg, VA*

- Established a new club targeting students' career developments through their contributions to open source projects.
- Created a timeline of goals and held events to target club growth, and introduced 55+ students to collaborative software development.
- Introduced collaborative workflow tools [e.g., Git, GitHub, GitLab] and provided resources to help students find meaningful open source projects of interest.

Virginia Tech, College of Engineering **Aug 2023 - Dec 2023**
Undergraduate Teaching Assistant, CS 1114 - Introduction to Software Design *Blacksburg, VA*

- Aided 200+ college students in developing critical understanding of new object-oriented programming concepts in Java.

TECHNICAL PROJECTS

Multimedia Web and Video Server ***Apr 2024 - May 2024***
CS3214 - Computer Systems, Course Project *Blacksburg, VA*

- Built a robust and tested multimedia server with multiple client support and protocol independence using HTTP/1.1 and TCP protocols to serve files and stream MP4 video.
- Authenticated user logins by verifying user-specific JSON web tokens through a token-based authentication API.

Job Control Shells ***Jan 2024 - Feb 2024***
CS3214 - Computer Systems, Course Project *Blacksburg, VA*

- Developed a Unix-based customizable shell with full capabilities of executing basic built-in commands and advanced custom commands, supporting pipes, I/O redirection, and programs requiring exclusive terminal access.
- Utilized posix_spawn to manage child processes for advanced custom commands, ensuring child processes retain necessary terminal control, and maintaining support for multithreaded programs.
- Incorporated autonomous signals through the OS Kernel to track foreground and background job status changes (i.e., SIGCHILD, SIGINT, SIGSTOP).

EDUCATION

Virginia Tech**, College of Engineering* ***May 2024
Bachelor of Science in Computer Science *Blacksburg, VA*
Minor in Mathematics *GPA: 3.716, Dean's List with Distinction*