John Y. Rodgers

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Experience

Viasat San Diego, CA
Software Engineer August 2018 - November 2023

- Ensured compliance with rigorous security standards in cross-virtual machine communications by designing and owning a **C++** library that managed **OpenSSL**-secured **DTLS** connections.
  - Prioritized developer convenience with argument-based configuration, allowing simple setup of encryption, timeout, SSL roles, and peer addresses, abstracting away the complexities of the underlying implementation.
  - Enhanced connection stability by integrating multi-threading for efficient and reliable heartbeat monitoring, facilitating automatic re-establishment of SSL connections as required for continuous operation.
  - Boosted efficiency and throughput by employing a multi-threaded approach to queue and send packets, optimizing network performance and data handling.
- Enhanced fault diagnosis & system reliability with **C++** library that created files detailing recent activity from failed **Docker**/**Kubernetes** containers, enabling more precise troubleshooting and system insights.
  - Optimized log management using circular buffers for priority-based storage, implemented **multi-threading** for enhanced performance, and established **IPC**-based communication to coordinate across multiple containers.
- Enhanced alerting and monitoring by developing data publishing microservice that streamed critical data from containers leveraging **gRPC** for transmission, **Fluent Bit** for filtering and enrichment, **Kafka** for publication.
  - Improved communication efficiency and response handling by developing a **C++** client library with auto-generated **gRPC** sources, simplifying client initialization, request creation, and stub method invocations.
  - Optimized data processing workflows using **Fluent Bit** for advanced filtering/enrichment, leading to efficient, content-based routing and improved data stream management with Stream Processor.
- Significantly reduced application suite build/test times by **>3 hours** through proposing, planning, and leading a summer intern project focused on process optimization and efficiency in a containerized build environment.
  - Dramatically reduced the number of files compiled by implementing modern **CMake** practices, resulting in a significant improvement in build efficiency and a more streamlined development workflow.
  - Accelerated development by implementing ccache in **Docker** build environment, cutting down data transfer with **volume mounts** to the host, resulting in over 95% faster build times on Apple chips.
  - Optimized efficiency by integrating external libraries into base **Docker** images, drastically reducing download and build times, while also simplifying the process of configuring and managing different library versions.
  - Effectively managed and mentored participants, providing guidance through the project's technical and operational complexities, ensuring successful project completion and a valuable learning experiences.
- Boosted team velocity by 25% over three-year tenure as a **Scrum Master** for 8-member development team, all while excelling in my primary role as a developer.
  - Successfully drove project outcomes by streamlining project workflows, efficiently managing tasks in **JIRA**, facilitating productive meetings, and fostering collaboration with leaders across various teams.
- Accelerated code review completions and development quality by revitalizing processes and training, fostering clear communication, faster issue resolution, and increased team knowledge.
  - Expedited merges by broadening reviewer pool using a PR template that captured crucial details, ensuring the clarity for all skill levels to contribute, increasing overall knowledge and preserving a valuable historical record.
  - Enhanced quality of collaborative development resulting in improved code quality, faster issue resolution by delivering code review training that emphasized effective communication and providing thorough feedback.

- Lowered dependency on individual expertise by initiating peer education program, conducting needs assessments, mobilizing subject matter experts, and creating a comprehensive video knowledge base.
  - Boosted technical proficiency of junior developers by holding regular skill-up sessions resulting in a knowledge base of **Zettelkasten** and **Diátaxis** based notes populated with **C4**, **Sequence**, and **State** Diagrams.
- **Deployed**, debugged and administered **Linux-based VMs** using **Jenkins** to develop, test, and deploy **Docker**/**Kubernetes** containers.
- Ensured rapid issue resolution and system reliability through critical **on-call technical support**, demonstrating a deep understanding of system architecture and cross-team product integration.
- Streamlined artifact synchronization between legacy **Perforce** and host build system using dedicated **Docker** container. Implemented **Bash** scripting and **volume mount**s for efficient file transfer.
- Eliminated **cybersecurity** risks by monitoring vulnerabilitites using **Blackduck** and **Security Scorecard**, **JIRA** tracking of resolution, leading to a perfect security assessment for the project.
- Mastered complex **regular expressions** for file identification by name and content with tools such as **find**, **ripgrep**, and **ag**, applied techniques for mass text editing in **Vim** and **Obsidian**.
- Deep intellectual curiosity and passion about learning through **methodical study**, **organized note-taking** using **Zettelkasten** method, systematic reviews using **spaced repetition flashcards**.

Viasat San Diego, CA
Software Engineer Intern June 2017 - August 2017

- Collaborated with an interdisciplinary team to consolidate multiple hardware testing tools into a single server rack, automating modem testing processes.
- Created equipment tests using **C++**, automated tests and reporting of results using **Python**, ensuring seamless communication and compatibility between devices.
- Performed extensive debugging and optimization of the automated system, ensuring robust performance in diverse operational conditions.

United States Navy
Information Systems Technician 2007 - 2012

- Obtained **TS/SCI/NSA Security Clearance**, demonstrating a commitment to stringent security protocols and a proven track record of trustworthiness and reliability in handling classified information.
- Configured, maintained, and monitored ship-wide **local-area network** including **servers**, **firewalls**, **routers**, and **switches**.
- **Supervised** five-member team of diverse backgrounds and life experiences through daily operations by focusing on respect, communication, and motivation.

Skills

Artifactory, Bash, C++, CMake, Cap'n Proto, Confd, Consul, Docker, Docker-compose, Fluent bit, GDB, Google Test, Graphana, gRPC, Helm, JIRA, Jenkins, Kubernetes, OpenSSL, Python, Redis, Splunk, Terraform, Valgrind, Vault

Education

University of California San Diego
Jacobs School of Engineering
BS in Computer Science

- Coursework: Object-Oriented Programming; Advanced Data Structures; Theory of Computability; Software Engineering; Computer Architecture; Artificial Intelligence: Search & Reasoning; Computer Operations & Product Engineering
- Organizations: **Vice President** of Student Veterans Organization where I advocated for student veterans and organized events including Raytheon Resume Panel & Networking Event, and Amazon Alexa Hackathon.