Mateus Alves da Rocha

Brasília, Brazil

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Skills

Languages: C++, Python, Shell scripting	**Monitoring & Observability**: Grafana, Prometheus
Systems & Backend: Distributed Systems, Performance Optimization, System Design	**Operating Systems**: Linux/Unix
	Protocols & Data: MQTT, HTTP, Protobuf
Cloud & Platforms: AWS (EC2, S3, ECR), Kubernetes	**Debugging & Diagnostics**: Profiling, Root Cause Analysis
Build & Testing: Bazel, GTest, CMake, Jenkins, GDB	**Embedded Systems**: Raspberry Pi, MSP430, ESP32

Work Experience

Software Engineer, Sigma Software Group - USA Client - Brazil (Remote)   Aug. 2024 – Present.

- Develop and maintain backend services in C++ and Python within distributed system environments, focusing on performance and reliability.
- Investigate and resolve production issues using logs, metrics, and monitoring tools, improving observability and system stability.
- Contribute to build and infrastructure improvements using Bazel and CI/CD pipelines to ensure reproducible and reliable deployments.
- Design and implement testing and validation strategies to verify system behavior across environments and under load.

Software Engineer, Onboard Mobility - Brazil (Remote)   Aug. 2023 – Aug. 2024.

- Improved search efficiency in a denylist component by refactoring from linear to constant-time complexity using hash-based approaches in C++, validated through profiling.
- Introduced and implemented unit testing practices for C++ codebases using Google Test, improving code reliability and maintainability aligned with SOLID principles.

Embedded Systems Test Engineer, APTIV - Poland (Hybrid)   Mar. 2022 – July 2023.

- Designed and executed system-level software tests for automotive platforms, creating structured test cases based on customer and safety requirements.
- Built an internal web-based tool integrated with the Jira API to streamline QA ticket creation and improve cross-team workflow efficiency.
- Implemented a Jenkins server and Python-based pipelines to automate repetitive testing tasks, reducing manual effort and improving consistency.

Embedded Software Engineer, Onboard Mobility - Brazil (Remote)   Oct. 2019 – Mar. 2022

- Developed remote device management tools in C++ and MQTT, enabling system diagnostics, health checks, and command execution across distributed devices.
- Optimized communication by replacing HTTP with MQTT-based encrypted payload transfer to AWS backend, reducing bandwidth usage and improving efficiency.
- Improved system performance and resource usage by refactoring core components and scheduling tasks with cron jobs, achieving 70% reduction in resource consumption.

Hardware/Firmware Development Engineer, Kinology - Brazil (Onsite)   June 2018 – Oct. 2019

- Redesigned an embedded product by migrating from Attiny84 + Bluetooth module to an ESP32-based architecture, reducing cost and simplifying hardware design.
- Developed calibration algorithms to optimize product initialization, reducing setup time to one-third of the previous process.

Education

Bachelor of Electronics Engineering   Dec. 2018.
University of Brasilia, DF - Brazil

International Exchange program by Ciências Sem Fronteiras   Aug. 2015 – Aug. 2016
Wayne State University, MI. - USA.
University of California, LA. - USA.