Rafael Bayer

github.com/rafibayer // rafibayer.github.io

(425) 786 3136
rafibayer7@gmail.com
linkedin.com/in/rafael-bayer

Experience

Microsoft Azure, Redmond — *Software Engineer II*

SEPTEMBER 2021 - PRESENT

I work on the scalability of the Azure Networking control plane, I optimize customer resource provisioning, and reduce E2E VM allocation times through cross-service collaboration. Leveraging data-driven insights, we enable our service to reliably handle billions of operations per day across 50+ regions.

Created a stateless service to offload responsibility from a monolith. Improved performance compared to HTTP by introducing gRPC based communication between services. Delivered a more than 10x speedup over our traditional stateful architecture in high concurrency scenarios by distributing traffic over many machines instead of a single node.

Developed and globally deployed a robust normalization system for JSON database entries. By dividing our data across multiple keys, we achieved a nearly 50% reduction in the amount of data read and written in hotpath scenarios, and increased concurrency by reducing lock contention on previously shared database entries.

Expanded our feature-flag system to our API gateway, enabling seamless and safe deployment of new features. This enhancement also enables us to swiftly reconfigure our throttling settings in response to high load or malicious customer traffic.

Microsoft Azure, Redmond— *Software Engineering Intern*

JUNE 2020 - SEPTEMBER 2020

Developed a configurable performance testing framework for a core networking service to validate the quality of all pull requests. Test framework records and compares execution time, CPU and Memory usage, GC pressure, and other key performance metrics.

Leveraged code instrumentation to produce tooling to assist in root cause analysis for performance regressions during development to prevent impact in production.

Education

University of Washington, Seattle — *BS in Informatics*

SEPTEMBER 2017 - JUNE 2021 | 3.74 GPA

Relevant courses:
Web Development, Databases, Data Structures & Algorithms, Data Science, System Design, AI, Backend Development, Programming Languages

Programming Languages

Proficient
C# | Python | Go | Rust | SQL

Familiar

JavaScript | Java | HTML | TypeScript

Technologies & Tools

Proficient

Git | GitHub | Azure DevOps | gRPC | Docker | Windows | .NET | Django

Familiar

Azure | Unity | Linux | DigitalOcean | Flask | K6

Personal Projects

CivicQA

CivicQA is a Constituent Management platform created to assist legislative assistants with responding to high volumes of mail. CivicQA employs a microservices based architecture using Go and Docker. (See GitHub)

Puffin

Puffin is a dynamic programming language created from scratch, with an interpreter written in Rust. Puffin supports imperative and functional language features including structures and closures. (See GitHub)