Sahib Yar

sahibyaar@hotmail.com — +92 336 6037321 — sahibyar.github.io — github.com/sahibyar — linkedin.com/in/sahibyar

Summary

Lead Software Engineer with diverse technical expertise in software engineering, leadership, and mentoring. Skilled in architecting robust, scalable, and maintainable solutions for high-complexity problems. Proficient in identifying, solving, and preventing technical debt to ensure best practices.

Experience

Software Engineer, CentroidSol.com (Remote, Dubai)

Mar 2024 – Present

Tech Stack: Golang, RESTful Architecture, JSON, Protobuf, AWS S3, Redis, Docker, PostgreSQL, FIX

- **Connection Management:** Optimized Redis usage via batched operations and single persistent client connections, reducing overhead under high-load conditions.
- **Abuse Prevention:** Designed a tiered throttling system to detect and block abusive connection attempts, applying escalating penalties based on frequency and volume from the same IP.
- **Stability Profiling:** Identified and resolved memory leaks using `pprof`, improving stability and resource efficiency under sustained traffic.
- **Latency Reduction:** Replaced HTTP with WebSockets for streaming and refined data pipelines, significantly lowering execution and ingestion latency.
- **Code Quality:** Refactored core components to reduce redundancy and improve maintainability.
- **Security:** Implemented role-based access control for APIs and sensitive trading operations, including a secure mechanism allowing administrators to switch roles and operate as Brokers or Traders when needed.

Lead Software Engineer, Securiti.ai (Remote, Pakistan)

Nov 2021 – Dec 2024

Tech Stack: Golang, Java11, Python, JUnit5, Apache Maven, J2EE, RESTful Architecture, JSON, Protobuf, AWS SQS, Redis, Kubernetes, PostgreSQL

- **Microservices and Data Processing:** Developed scalable microservices for personal data identification in structured/unstructured formats, leveraging proprietary and open-source libraries.
- **Access Control and Security:** Implemented fine-grained role-based access control for APIs and sensitive payloads. (Go)
- **Performance Enhancements:** Optimized network latency by replacing HTTP GET with WebSocket communication and Redis Streams. Improved structured data parsing latency by 50%. (Go, Java)
- **AWS Migration and Integration:** Upgraded AWS SDKs (S3, SQS, EMR) to v2.x, enhancing reliability, and designed REST APIs for secure secret management and S3 CRUD operations. (Java, Go)
- **Cardinality Optimization:** Reimplemented Redis HyperLogLog for efficient terabyte-scale dataset processing. (Go, Java)
- **Testing and Stability:** Improved test coverage for commercial features and stabilized pipelines with enhanced validation checks. (Go, Python)
- **Code Refactoring and Tech Debt Reduction:** Reduced technical debt by refactoring and removing over 5,000 lines of redundant code. (Go, Java)
- **Library Enhancements:** Contributed to open-source TableSaw library by implementing advanced CSV column data type detection. (Java)
- **Document Parsing:** Optimized tools like Apache Tika and PDFBox for efficient document parsing. (Java)

Key Contributions:

- Designed scalable subsystems to process terabyte-scale datasets.
- Led a team of five engineers, achieving milestone deliverables and mentoring juniors on design patterns and code quality.
- Delivered significant performance gains across network and data processing operations, improving system efficiency.

Senior Software Engineer, Afiniti (Hybrid, Pakistan)

Nov 2019 – Nov 2021

Tech Stack: C++17, CentOS, Shell Scripting, Kafka (rd-kafka, cpp-kafka), PostgreSQL, MySQL, RESTful Architecture, TCP/IP, SSL, Protobuf, POSIX Shared Memory, CMake

- **Reporting System Development:** Designed a microservice-based reporting system to monitor contact center activities (e.g., call statistics, agent states) in near real time, ensuring high throughput and concurrent processing across multiple servers.
- **SSL Communication System:** Developed an SSL-based communication solution integrated with Avaya Call Manager, supporting CMS protocols (6.x to 9.x) for secure and reliable data exchange.
- **System Optimization:** Replaced Kafka with an asynchronous file-based database mechanism, improving throughput by 1000% and reducing query response times by 1500% through SQL optimization.
- **Concurrent TCP Server:** Implemented a high-performance TCP server to efficiently manage multiple client connections under heavy workloads.
- **Inter-Process Communication:** Used POSIX shared memory for efficient inter-process communication, enhancing data sharing between processes.
- **Maintenance and Refactoring:** Refactored legacy code-bases, resolved defects, and improved system features to improve reliability and maintainability.
- **Scheduled Job System:** Built and maintained a distributed scheduled job system to automate key operations across multiple servers.

Key Contributions:

- Achieved significant performance gains (up to 1500%) through system optimization and bottleneck resolution.
- Successfully developed secure, scalable solutions for contact center monitoring and data exchange.
- Improved team productivity by maintaining and modernizing critical legacy systems.

Implementation Engineer, Avanza Solutions (Oman, Somalia, Pakistan) Nov 2017 – Nov 2019

Tech Stack: Java Spring, .NET, VC++, C, Oracle, MSSQL, MSMQ, ISO-8583 Protocol, EMV, HSM (Thales), RESTful APIs, SOAP

- **Middleware Development:** Designed scalable and secure middleware for payment systems, integrating core banking platforms, ATMs, and third-party services, and enhancing transaction throughput by optimizing legacy systems.
- **ISO-8583 and EMV Integration:** Built ISO-8583-compliant EFT solutions, integrated Thales HSMs for cryptographic operations, and implemented EMV-compliant card transactions to meet international security standards.
- **PA-DSS Compliance:** Upgraded back-end systems for banks like UBank and AB Bank to ensure compliance with Payment Application Data Security Standards (PA-DSS).
- **On-Site Deployments:** Led successful deployments, including:
  - 1Link PayPak integration and Pay2Anyone enhancements for BankIslami, Pakistan.
  - MasterCard issuing certification for Premier Bank, Somalia (EMV and magnetic stripe cards).
  - OmanTel prepaid card integration with Bank Dhofar, Oman ATMs.
- **Testing and Debugging Tools:** Created .NET and C++ utilities to mock ISO-8583 socket communication, streamlining transaction flow testing and debugging.
- **Collaboration and Training:** Worked with cross-functional teams during the development, UAT, and deployment phases, providing technical documentation and training for banking personnel.

Junior Software Engineer, InfoTech Group (Pakistan) Nov 2016 – Nov 2017

Tech Stack: C++, Node.js, Angular 2.0, .NET, MSMQ, FAST Protocol, RESTful APIs, OAuth, ActionScript, Adobe Flash

- **Algorithm Development:** Designed and maintained efficient algorithms for the internal SDK of a low-latency automated trading system, reducing the latency of trade execution by more than 20% and ensuring the seamless execution of high-frequency trades.
- **RESTful APIs:** Developed and consumed RESTful APIs using Node.js and Angular to enable robust client-server communication for trading operations, while also participating in code reviews and ensuring modular, reusable code.
- **Frontend and Legacy Maintenance:** Maintained and improved Adobe Flash-based trading platforms, including the Ghana Stock Exchange system, while contributing to the migration of legacy systems to modern Node.js and Angular-based architectures.
- **Trading System Enhancements:** Contributed to the development of a high-frequency real-time trading application with pretrade risk management, accommodating thousands of concurrent users, and ensuring compliance with secure OAuth authentication.
- **Collaborative Development:** Worked with cross-functional teams to build a Single Page Application (SPA) for trading, leveraging MSMQ for asynchronous communication and the FAST protocol for high-performance data transmission in financial markets.

Education

Bachelor of Science (BS), Computer Science 2012 – 2016
Air University, Multan, Pakistan

Open Source Contributions

- Right now privately developing `MCPGen`, which can auto-generate a multiservice MCP (Message Control Protocol) server from OpenAPI v2 (Swagger), v3 (Arazzo) Spec Files. Turn API definitions and workflow specs into a smart, pluggable server that can coordinate real tasks, locally or in the cloud.
- Contributed to `quic-go`, `go-libp2p`, `jtablesaw`, `ISO8583-go`
- Exploring Web-Transport and HTTP3 protocols.
- Created educational content on YouTube for software development topics.