BILAWAL IMDAD

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Software developer with over four years of experience across FinTech, banking, telecom billing, and mobile application development, with proven contributions in building secure, high-performance systems, implementing complex features, and leading troubleshooting efforts to ensure system reliability.

PROFESSIONAL EXPERIENCE

Mobile & Backend Developer — 9D Technologies, Islamabad

December 2025 – Present

- Developing backend systems for **Tawk**, a multi-protocol messaging "super-inbox" app, and **Binge Beyond**, an OTT/VPN streaming platform, alongside native mobile app development.
- Building **AI integrations** that let users offload complex, multi-step tasks to a remote AI backend for execution.
- Working across the stack in **Go, Python, Kotlin, and Rust** for backend services and mobile app development.
- Building **on-device Go and Rust libraries** exposed to Kotlin apps as a single function call, offloading roughly half the workload of a complex sub-task to natively compiled cross-language subprocesses for significantly higher performance than pure Kotlin/JVM execution.

C/C++/Go Developer — SafariOne, Islamabad

July 2022 – December 2023 | June 2025 – November 2025

- Migrated **Node.js API services and legacy C++ services to Go**, improving performance and scalability while reducing complexity across distributed systems.
- Designed and developed a **Mobile Banking Notification System** handling **Email, SMS, and USSD notifications** across **ATM Controller, Mobile Banking Core**, and related portals, processing over 500,000 notifications daily, significantly improving communication efficiency **and customer engagement**.
- Managed backend development and the phased migration of **mobile banking and portal ecosystems** to Go, collaborating with cross-functional teams on integration with **ATM networks, vending systems, and billing partners**.
- Developed and optimized **core components** of telecom, fintech, and billing platforms, ensuring **high throughput, low latency, and horizontal scalability**.
- Led the **migration from a monolithic C architecture to a microservices-based system**, improving maintainability, fault isolation, and deployment agility.
- Built **automated testing frameworks** using **Valgrind, Perf, gdb, and Cert-Rosecheckers,** and **CI/CD pipelines** on a **private GitLab server**, covering performance, functional, code coverage, and security validation.
- Engineered **containerized deployments** with **Docker Swarm and Kubernetes** for **1-click scaling and rollback management**, and optimized **Oracle, Redis, TimesTen, and MySQL** performance for real-time transaction systems.
- Implemented **secure communication layers** using **TLS, AES, RSA, ECC**, and **secure tunneling protocols**, ensuring data integrity and confidentiality across distributed systems.

C++/.NET Developer — Avanza Solution Ltd, Remote

December 2023 – May 2025

- Migrated a **payment gateway from SWIFT MT to ISO 20022 MX**, ensuring compliance with modern financial messaging and settlement standards, and enabled **direct integration support for cryptocurrency exchanges**.
- Upgraded a **.NET Framework 4.6 codebase to .NET Core 8**, resolving compatibility issues and enabling **full cross-platform support**.
- Refactored a **Windows-specific C++ system** into a **CMake-based cross-platform architecture**, allowing services to run seamlessly on multiple operating systems.
- Designed and deployed an **ELK-based logging pipeline and visualization dashboard**, reducing support debug time **from hours to just a few minutes** and enabling integration with **AI-based fraud detection systems**.
- Simplified and modernized **system configuration** by replacing complex XML setups with a **GUI-based configurator** and **Docker Swarm–managed scaling**, improving usability and deployment efficiency.

EDUCATION

Bachelor of Science in Computer Science

COMSATS University Islamabad | July 2022

Final Year Project: Remote Exam Invigilator. Developed a **cross-platform remote examination system** using **Java, JavaFX, Spring Boot, Electron, TensorFlow, and Azure Cloud Services**. The system securely monitored candidates and their environments by analyzing running applications and real-time camera feeds through AI-based proctoring. Implemented **system lockdown mechanisms** to prevent unauthorized access during exams and designed an **offline-first architecture** to ensure full functionality and exam credibility even without internet connectivity.

TECHNICAL SKILLS

Languages: C++, Go, Rust, Python, Kotlin, C#, Java, JavaScript

Mobile: Android (Kotlin), JNI/FFI bindings, Go Mobile, Rust cross-compilation for Android

Databases: Oracle DB, MySQL, MS SQL Server, Redis, TimesTen

Messaging & Protocols: RabbitMQ, NATS, ActiveMQ, SWIFT MT, ISO 20022, REST, WebSockets

Development & Deployment: Go Modules, .NET Core, Node.js, Docker, Kubernetes, PM2, CMake, CI/CD (GitLab, Jenkins)

Monitoring & Performance: ELK Stack, Perf, Valgrind, gdb, RoseCheckers

OS & Infrastructure: Linux (Ubuntu, CentOS, RHEL), Windows Server, Shell Scripting, Systemd

Networking & Security: Advanced socket programming (TCP/UDP/UDS), SSL/TLS, secure distributed design, cryptography (AES, RSA, ECC, PKI), secure tunneling (SSH, VPN, IPSec)

Reliability & Support: SIT, troubleshooting, monitoring, and optimization of large-scale systems

PROJECTS

Multiplayer Implementation for Hide and Seek Game (Unreal Engine)

C++, Unreal Engine 5, TCP/UDP Networking, SSL/TLS

- Designed and implemented a real-time multiplayer system for a Hide and Seek game using Unreal Engine 5.
- Developed a custom C++ server handling session management, player synchronization, and secure TCP/UDP communication.
- Optimized network packet flow and latency handling for smooth, scalable multiplayer performance across clients.

High-Frequency Trading System (Crypto, Coinbase)

Java, Python, TensorFlow, Redis, Coinbase API, WebSockets, RSS Feeds

- Engineered a high-frequency crypto trading system integrating live Coinbase order books with real-time RSS news sentiment analysis.
- Implemented a machine learning–based tipping engine for dynamic trade strategy optimization, leveraging asynchronous pipelines and low-latency communication for sub-second execution.

PROFESSIONAL COMPETENCIES

- **Engineering Collaboration:** Highly proficient in peer programming and leading collaborative brainstorming sessions to define features, resolve architectural disputes, and accelerate development velocity.
- **Requirements & Discussion:** Expertise in translating complex business objectives and vague problem statements into actionable technical specifications through robust requirements gathering and focused technical discussions.
- **System Health & Quality:** Strong aptitude for code debugging across legacy and distributed systems, coupled with extensive experience in System Integration Testing (SIT) and performance troubleshooting using tools such as Valgrind and gdb.
- **Knowledge Transfer:** Proven ability in authoring comprehensive documentation and mentoring junior developers to enhance team knowledge and ensure standardized development practices.