Asad Ali Amjad

ENTERPRISE SOFTWARE ARCHITECTURE ⌘ SCALABILITY & SECURITY ⌘ AUTOMATION, CI/CD, DEVOPS

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Results-driven Enterprise Software Architect with 13+ years of experience overseeing the design, development, and delivery of full-stack software, embedded systems, and enterprise automation solutions. Track record in architecting scalable and high-performance systems. Expert in C, C++, C#, Python, Qt applications, OpenGL, Linux, Nucleus RTOS, Jenkins, and automation frameworks, with a history of resolving technical challenges and driving operational efficiency. Recognised for mentoring teams, executing CI/CD pipelines, automating workflows, and delivering maintainable architectures aligned with business objectives.

Relevant Skills & Knowledge

Software Development Lifecycle (SDLC)
Code Quality & Static Analysis Tools
Service-Oriented Architecture (SOA)

Real-Time Communication Systems
CI/CD & DevOps-Aligned Architecture
Process Redesign & Automation

Data Security & Encryption
Team Leadership & Mentoring
Modular System Design

Technical Proficiencies

Programming & Scripting: C, C++, Python, Java, C#, Perl, Shell Scripting **| Embedded Software:** Embedded Linux, Nucleus RTOS, Device Drivers **| Networking & APIs:** TCP/UDP/IP, REST APIs, OpenAPI, WebSockets

Application Development: Python, Flask, ASP.NET, C, C++, Java **| Automation & Testing:** Jenkins, Automation, Android Automation, Microsoft Playwright, Google Chromium **| IDEs:** VS Code, Eclipse **| Version Control:** Git, SVN **| Methodologies:** Agile, Scrum, Jira, Confluence **| GUI:** Qt (MCUs, QML, C++ Widgets), OpenGL ES, GLSL, Windows Forms, GMap.NET, SlimDX

Professional Experience

Lead Software Engineer | Afiniti – Pakistan — Jun 2024 – Dec 2025

- Increased development performance using enterprise LLMs with GitHub Copilot in VS Code to rapidly deliver features, implement unit tests, review code, analyse logs, debug issues, and leverage MCP servers to optimise AI tool usage.
- Eliminated chronic Linux VM instability issues on Windows laptops by investigating root causes, implementing solutions with IT, and escalating critical blockers to senior leadership, boosting engineer productivity and operational efficiency.
- Developed PII protection in Nice In-Contact CX switch interface, reinforcing data security and reducing data breaches.
- Expedited testing and verification of code changes using Docker containers and Dev-Containers extension in VS Code.
- Augmented customer experiences and ensured consistent performance by overseeing the deployment of Afiniti Switch Interface services, enabling seamless operations in high-volume Nice In-Contact CX environments.
- Optimised customer support operations by creating a detailed OpenAPI document, bridging knowledge gaps, reducing communication overhead, and enabling successful switch interface testing in new customer environments.
- Contributed to execution and bug fixes of watchdog and arbiter systems for smooth process monitoring and arbitration.
- Managed the end-to-end development and delivery of a scalable Shared Memory (SHM) size estimation tool that improved capacity forecasting and resource efficiency for mission-critical call routing systems.

Principal Software Engineer | SlashNext – Lahore, Pakistan — Dec 2023 – May 2024

- Added new features in cloud backend services to detect/block URLs in enterprise emails, fortifying security posture.
- Efficiently completed all projects in tight deadlines, driving consistent progress and meeting stakeholder expectations.

Senior Technical Lead Engineer | Mentor Graphics – Lahore, Pakistan — Feb 2021 – Nov 2023

- Increased team performance and business productivity by optimising sprint planning, stand-ups, and retrospectives.

Project: Security Add-on for Nucleus RTOS

- Streamlined and accelerated OpenSSL upgrade integration for Nucleus RTOS by streamlining workflows, automating 90% of upgrade steps and 70% of testing, cutting release cycles from months to a single 3-week sprint.

- Delivered a fully ported OpenSSL 3.x solution on Nucleus 4.x, elevating encryption support and system interoperability.
- Executed OpenSSL version upgrades across legacy Nucleus systems, improving system reliability and security posture.
- Completed the development of automated Jenkins pipelines to execute OpenSSL unit tests on the Nucleus platform across QEMU, Cyclone V SoC, P1015, Sabre Lite, and UltraZed-EG, ensuring consistent build quality.

Project: Nucleus:13 Vulnerabilities Fixes for Nucleus Legacy Customers.

- Executed targeted security patches for 13 Nucleus vulnerabilities, strengthening system integrity for legacy customers.

Project: Qt for MCUs

- Established integration feasibility for Qt for MCUs on Nucleus RTOS through comprehensive source-code and toolchain evaluation, reducing technical risk for future product releases.

Technical Lead Engineer | Mentor Graphics – Lahore, Pakistan   Aug 2016 – Jan 2021

Product: Security Add-on for Nucleus RTOS

- Engineered the porting of OpenSSL 1.1.1 to Nucleus 3.x and 4.x, enhancing system security and compatibility.

Project: Ported a FAT RAM Disk driver to Nucleus 4.1

- Ported a FAT RAM Disk driver to Nucleus 4.1, mounting into Nucleus 4.1, using the parameters from Device Tree Blob (DTB) for the underlying SoC.

Project: Test Automation of Nucleus VPN Server with Android

- Developed an application that automated VPN setup on Nucleus, reducing manual errors and accelerating test cycles.
- Automated Android VPN workflows via Automate App, ensuring consistent performance checks and faster testing.
- Created scripts and added test cases in Scaptic framework to trigger Automate App flows on Android for consistent and reliable testing of Android VPN client with Nucleus RTOS VPN service.

Projects: OpenVX Test Suite Evaluation 2017

- Evaluated OpenVX architecture to develop targeted test cases, ensuring thorough verification of the 2017 version.

Products: Qt Framework Add-on for Nucleus RTOS

- Developed a streamlined, repeatable process for Qt open-source upgrades integration into Nucleus RTOS, slashing manual completion time from months to weeks and significantly improving system reliability through automation.
- Orchestrated automation of repetitive tasks via Jenkins, freeing team resources for higher-value engineering activities.
- Improved SDLC process by fixing Eclipse plugin bugs, ensuring reliable builds and seamless Qt application deployment.
- Delivered unit tests for safety graphics rendering system, reinforcing the graphics module accuracy and performance.

Senior Software Development Engineer | Mentor Graphics – Lahore, Pakistan   Oct 2014 – Jul 2016

Projects: Nucleus Qt C++ Applications Optimisation for AMC & Industrial Tank Automation Demo

- Transformed application performance through strategic optimisation of Qt C++ widgets on Nucleus RTOS, achieving measurable improvements in efficiency, reliability, and overall user experience.
- Earned Best Technical Support Award (January 2016) by delivering timely and high-quality technical assistance.
- Designed a fully functional industrial tank automation demo, illustrating adjusted control workflows and system reliability.

Product: Qt Framework Add-on for Nucleus RTOS

- Optimised GUI performance by porting Qt 5.6.0 to Nucleus 2016.05, delivering responsive and reliable user interfaces.
- Built automated Qt testing pipelines for Nucleus, ensuring consistent results across emulated and hardware platforms.
- Devised high-fidelity OpenGL test applications, enabling performance benchmarking of Qt with GPU on Nucleus RTOS.

Software Developer – Control Systems | AEDesign – Lahore, Pakistan   Aug 2013 – Oct 2014

Product: AVCASS Mini Robot / TS-7800 Embedded Linux C++ Application / Windows C# Application

- Augmented robotic linear motion by developing a C++ application with an integrated PID control system.
- Engineered network communication modules, enabling real-time control of the robot via TCP/IP and UDP/IP.
- Delivered a hybrid control Application (C#) for Windows, facilitating rapid communication with the robot while

maintaining precise control and reliable autonomous navigation.

Business Applications Executive | Metro Cash and Carry – Lahore, Pakistan　　　　**Mar 2013 – Aug 2013**

- Implemented end-to-end automation in MIS reporting using C# and ASP.NET, improving visibility of critical metrics.

Software Engineer | Xelleration - Lahore, Pakistan　　　　**Jun 2012 – Feb 2013**

Product: A shopping cart web part for Microsoft SharePoint

- Delivered a ready-to-use shopping-cart web part for rapid enablement of e-commerce in Microsoft SharePoint sites.

*Additional Experience as **Graduate Teaching Assistant (Aug 2011 – Jan 2012) at LUMS** – Lahore, Pakistan*

Education

Bachelor of Science (Honours) in Computer Engineering | LUMS – Lahore, Pakistan　　　　Jun 2011