Muhammad Mohsin

Curriculum Vitae (Targeting Embedded Systems)

Profile

Highly motivated M.Sc. candidate in Computer and Systems Engineering with a core focus on **Security in Embedded Systems** at TU Ilmenau. Proven software development background, emphasizing C/C++, low-latency processing via NDK/JNI, and robust system architecture. Seeking a challenging **Working Student** position to apply and expand expertise in embedded software, systems development, and hardware-software interaction in Germany.

Technical Skills

Core Systems & Languages	**C/C++** (JNI/NDK Integration), **Python**, Kotlin, Java, SQL, Dart
Embedded & Low-Level	**Embedded Systems Security** (M.Sc. Focus), JNI/NDK, OpenCV (Image Processing), Data Preprocessing, Feature Extraction
Tools & Platforms	Git, CI/CD (GitHub Actions), Firebase, ML Kit, ProGuard, JIRA, REST API Prototyping (Flask)
Architecture	MVVM, MVI, Clean Architecture, Repository Pattern, Reactive Programming (RxJava/Flow)
Certification	Google CyberSecurity Professional (Foundational knowledge in security principles)

Education & Language

2025 – 2027 (Expected)	**M.Sc. Computer and Systems Engineering**, *Technische Universität Ilmenau*, Ilmenau, Germany Focus Area: Security in Embedded Systems
2014 – 2016	**M.Sc. Information Technology**, *University of Education Lahore*, Lahore, Pakistan
German Language	A2 Proficiency

Selected Projects (Relevant to Systems)

2024	**Advanced PDF Scanner (50M+ Downloads)**, *System Integration & Performance*

- Engineered high-performance, low-latency image manipulation features (edge detection, filtering) by integrating **C++ and OpenCV via JNI/NDK**.
- Directly responsible for optimizing system-level resource consumption and ensuring real-time performance across diverse hardware.

2023	**Fingerprint Classification System**, *Image Processing & Feature Extraction*

- Implemented a system combining rigorous **image preprocessing** and **manual feature extraction** (minutiae).
- Developed the data processing pipeline and implemented a baseline classifier (SVM), demonstrating capability in algorithm design at the processing level.

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2024 **Multi-View CNN Implementation**, *Deep Learning & Computational Modeling*

- Developed and trained a multi-view Convolutional Neural Network for complex image classification (plant diseases).

- Showcased hands-on capability in designing and training complex computational models, from data preprocessing to model evaluation.

Professional Experience

Feb 2022 – **Android Developer**, *Satus Systems*, Lahore, Pakistan
Oct 2025
- **Systems Optimization:** Refactored critical codebase segments using Kotlin Coroutines & Flow, leading to a significant reduction in app freezes and improving user experience on the client side.

- **Quality & Reliability:** Reduced the overall app crash rate by 20% through proactive monitoring and robust code reviews.

- **Integration:** Integrated complex third-party SDKs (Stripe and PayPal), increasing payment success rate by 35%.

Apr 2021 – **Android Developer Intern**, *Softlinks*, Lahore, Pakistan
Jan 2022
- Built foundational Android applications using Java and Kotlin, focusing on efficient data exchange via REST APIs (Retrofit and Volley).

- Translated complex UI/UX designs into functional, responsive screens, demonstrating attention to detail and user interface integrity.

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