

# 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	<b>C/C++</b> (JNI/NDK Integration), <b>Python</b> , Kotlin, Java, SQL, Dart
Embedded & Low-Level	<b>Embedded Systems Security</b> (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 (Rx-Java/Flow)
Certification	Google CyberSecurity Professional (Foundational knowledge in security principles)

### Education & Language

2025 – 2027 (Expected)	<b>M.Sc. Computer and Systems Engineering</b> , <i>Technische Universität Ilmenau</i> , Ilmenau, Germany Focus Area: Security in Embedded Systems
2014 – 2016	<b>M.Sc. Information Technology</b> , <i>University of Education Lahore</i> , 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.

Ilmenau, Germany

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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.

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## 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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