

Akshar Kalathiya

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Profile

Hands-on Software Engineer with 3+ years of experience building production systems across Android, embedded devices, and desktop applications. Strong in Android (Kotlin/Java), Raspberry Pi, ESP32, and Python tooling, with a track record of delivering revenue-generating and cost-optimized solutions.

Education

Government Engineering College, Gandhinagar 2019 – 2023

- (CGPA: 8.23 / 10.00)
- **Coursework:** Bachelor of Engineering in Electronics and Communication Engineering

Experience

Software Engineer, Mindron – Surat, Gujarat February 2023 – Current

- Automated Raspberry Pi OS provisioning and device setup using scripting, reducing manual configuration time and improving deployment consistency.
- Owned and developed the end-to-end software stack spanning embedded systems, desktop applications, and Android-based mobile solutions.
- Designed and built production Android applications using Java and Kotlin, implementing Camera2-based image capture and hardware control workflows.
- Implemented Bluetooth (Classic/BLE) communication between Android applications and ESP32-based inspection hardware.
- Built and maintained Python-based desktop tools; migrated legacy GUI systems from PySide2 to PySide6 for improved maintainability.
- Designed camera data pipelines and prepared validated image datasets to support AI inference workflows.
- Designed an on-prem local AI inference architecture using multiple GPU-backed nodes to avoid cloud dependency and reduce infrastructure cost.
- Implemented queue-based request handling with priority-aware scheduling to improve GPU utilization and inference throughput.

Projects

Diamond Identification System Using Raspberry Pi

- Designed and implemented a diamond identification system using Raspberry Pi and a high-resolution camera.
- Utilized OpenCV for image processing and analysis under UV lighting to determine diamond characteristics.
- Controlled hardware components such as UV LEDs and camera modules using GPIO.

Android-Based Diamond Inspection and ESP32 Bluetooth Control

- Developed an Android application in native Java to capture and process diamond images using the Camera2 API.
- Enabled real-time control of inspection hardware via Bluetooth communication with ESP32.
- Later rebuilt the application in Kotlin for improved performance and modern UI/UX using Jetpack libraries.
- Integrated Firebase to store inspection data, user records, and captured images securely in the cloud.
- Implemented features such as image enhancement, gallery management, device pairing, and cloud sync.

Technologies

Languages: Kotlin, Java, Python, C, C++, SQL

Technologies & Tools: Android SDK, Jetpack, Jetpack Compose, Camera2 API, Firebase (Firestore, Realtime Database, Storage, Cloud Functions), ESP32, Raspberry Pi, Bluetooth (Classic & BLE), OpenCV, Git, Linux, GPIO, Android Studio, VS Code