

WORK EXPERIENCE

Flutter Developer [Volunteer]

Aug 2024 – Aug 2024

Lothga - Task Based

Jeddah, Saudi Arabia, SA

During the development of the "LothgaTablet" project:

Developed the project's core and kernel features.

Constructed a foundational system to support the application.

Implemented an audio system to enhance user experience.

Created a central database to integrate all games into a cohesive system.

Enabled parental oversight of children's progress and provided extensive control over game content, including questions and visuals.

PROJECTS

Flutter-Dicom

Apr 2026 – Present

Dart Package

Engineered a medical imaging library for Flutter, utilizing Rust and FFI bridge to parse complex DICOM files without blocking the Dart UI thread, achieving an ultra fast throughput of ~296 FPS.

Implemented custom GPU Fragment Shaders to deliver true 16bit depth precision and real time Hounsfield Unit windowing, executing over 3,400 fluid contrast adjustments per second with sub-16ms latency.

Optimized memory allocation through zero copy FFI buffers, successfully processing, rendering, and disposing of clinical datasets containing 250+ volumetric frames in under 1 second while maintaining a highly stable 6.00ms p99 latency.

Architected a robust and developer friendly API featuring a built in DicomViewer widget, strict edge case resilience for mathematical overflows, and seamless dependency injection to support scalable, medical applications.

Network-Reachability

Dec 2025 – Present

Dart Package

Engineered a high performance network monitoring library for Flutter, leveraging a native Rust core to execute complex multi target probing and DNS resolution without blocking the Dart UI thread.

Developed advanced diagnostic algorithms to calculate real-time connection stability (Latency, Jitter, Packet Loss) and battery-aware adaptive polling.

Architected resilient networking patterns including a guard() wrapper with a built-in Circuit Breaker mechanism and Thundering Herd protection to optimize API requests.

Implemented security features, enabling the detection of DNS hijacking, VPN/Proxy usage, and Captive Portals.

Radix-Plus

Oct 2025 – Present

Dart Package

Engineered Radix Plus, a high performance sorting library outperforming Dart's native List.sort() by up to 7.0x (~191ms for 1M+ elements using Uint32List).

- Implemented Parallel Processing utilizing Dart Isolates, unlocking massive multi-core speedups that sort 1,000,000+ elements in just ~29ms (56.5x faster).
- Optimized Memory Allocation through in-place sorting, buffer pooling, and zero-copy operations directly on TypedData to eliminate memory overhead and GC pressure.
- Developed Adaptive Algorithms providing stable sorting for int, double (with strict NaN handling), and BigInt across diverse data sizes.

FP-Growth

Nov 2025 – Present

Dart Package

- Engineered a high performance data mining library implementing the FP-Growth algorithm, capable of processing 1,000,000+ transactions in ~1.46s.
- Architected a memory optimized two pass system utilizing a fixed size Isolate Pool for parallel processing, enabling the analysis of massive datasets without out of memory errors.
- Developed advanced association rule generation, calculating complex statistical metrics including Support, Confidence, Lift, Leverage, and Conviction for deep data insights.
- Built a comprehensive Developer Tooling ecosystem, including a standalone CLI tool and stream based CSV adapters to parse and export large files (JSON/CSV) efficiently.

GoPix

Jun 2025 – Present

Image Conversion CLI Tool

- Blazing-Fast Conversion: Processes thousands of images in parallel across all CPU cores, drastically reducing batch processing time.
- Multi-Format Support: Converts between PNG, JPG, JPEG, WebP with custom quality, compression, and smart backup options.
- Robust & Reliable: Handles recursive directories, interrupted jobs, rate limiting, and safe defaults to prevent data loss.
- Developer-Friendly CLI: Feature-rich terminal tool with YAML config, progress bars, logging, and easy integration into workflows.

Tadamon

May 2024 – present

Flutter

- Empowering Cause-Driven Consumers: Helps users make ethical purchasing decisions supporting the Palestinian cause.
- Offline-First & Cloud Sync: Local Objectbox database with seamless Firebase Firestore synchronization for reliability anywhere.
- Smart Product Scanning & Reporting: Fast barcode scanning via Google ML Kit, PDF exports, and user-driven product reporting.
- Robust & Scalable Architecture: Built with Flutter using BLoC, Repository pattern, and dependency injection for maintainable, modular code.

Motivational Quotes

Nov 2025 – Nov 2025

Flutter

- Interactive Motivation App: Delivers random motivational quotes triggered by device shake gestures.
- Native Integration: Uses Flutter platform channels with Kotlin to handle accelerometer-based shake detection.
- Enhanced User Experience: Smooth scaling and fading animations for an engaging and responsive UI.
- Clean Architecture: Well-structured Flutter project ensuring separation of concerns and maintainable code

Flutter

- Movie Discovery App: Enables browsing popular, top-rated, and upcoming movies with detailed views.
- Clean Architecture: Feature-driven Flutter project using BLoC for scalable and maintainable state management.
- Offline & Efficient: Hive for local caching, `cached_network_image` for smooth scrolling and image loading.
- Modern Dev Practices: Dependency injection with GetIt, network handling via Dio/Retrofit, responsive UI with ScreenUtil, and error monitoring using Sentry

OPEN SOURCE CONTRIBUTIONS

Yaru.dart [↗](#)

Mar 2026 – Present

Ubuntu Linux

- Enhanced package maintainability and developer experience by implementing strict type annotations, standardizing deprecation warnings, and upgrading core dependencies to resolve critical pub.dev [↗](#) compatibility issues.
- Streamlined the testing architecture by migrating from the base Dart test package to flutter test, successfully consolidating the testing framework and resolving fragmented Continuous Integration reports

Toastification [↗](#)

Apr 2026 – Present

Dart Package

- Optimized package efficiency and significantly reduced application bundle sizes APK/AAB by eliminating heavy, unused external dependencies

Musicpod [↗](#)

Present

Ubuntu Flutter Community

- Spearheaded the application's internationalization by implementing full Arabic localization and engineering seamless Right to Left layout support across the entire UI
- Ensured cross locale UI/UX consistency by adapting complex layouts for RTL rendering, thoroughly testing and verifying zero regressions for existing Left to Right users

EDUCATION

Benha University [↗](#)

Oct 2022 – May 2026 | Benha, Egypt

*Bachelor of Computer Science***TECH SKILLS**

Languages: Dart | Go | Kotlin | Python**Frameworks:** Flutter | Gin**Tools & Others:** Linux | Git | Docker | CI/CD**CERTIFICATES**

The Complete Dart Development Guide [↗](#) | The Complete Flutter Development Guide [↗](#)

LANGUAGES

Arabic — Native

English — Fluent

Japanese — Basic