

# Amed Berzinar

## Full Stack & Flutter Developer

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### SUMMARY

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Full Stack Developer with 4+ years of experience building production-grade web, desktop, and mobile applications. Specialized in Flutter/Dart for cross-platform mobile and desktop applications with system-level integration (Win32 FFI, COM automation, ESC/POS protocols) and AI/ML capabilities (MediaPipe). Equally proficient in React, Next.js, TypeScript, and Node.js ecosystems. Proven ability to architect multi-tenant platforms, integrate hardware peripherals, and deliver client projects under tight deadlines.

### TECHNICAL SKILLS

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**Flutter & Mobile/Desktop:** Flutter, Dart, Win32 FFI, COM Automation, Provider, SQLite, ESC/POS, fl\_chart, PDF Generation

**Frontend:** React, Next.js, TypeScript, JavaScript, Tailwind CSS, Framer Motion, HTML5, CSS3

**Backend & Database:** Node.js, Express.js, PostgreSQL, MongoDB, Prisma ORM, Firebase, NextAuth.js, REST APIs

**AI / ML:** Python, MediaPipe Face Mesh, Eye Tracking (EAR), 3D Head Pose Estimation, Iris Gaze Detection

**Tools & DevOps:** Git, Docker, Figma, Netlify, Zod, ESC/POS Thermal Printers, Barcode Scanners

### PROJECTS

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#### Point of Sale (POS) System

*Cross-Platform Desktop App | Flutter, Dart, SQLite, ESC/POS, fl\_chart*

- Architected a cross-platform POS desktop application (Windows, macOS, Linux) with multi-tenant architecture supporting multiple client businesses per seller account
- Engineered an 18-version incremental SQLite migration system with backward compatibility and zero data loss across updates
- Built real-time admin dashboard with interactive sales trends, hourly performance, payment breakdowns, and top product charts
- Implemented role-based access control (Admin, Cashier, Seller) with fine-grained dot-notation sub-permissions and UI guard widgets
- Integrated low-level ESC/POS thermal receipt printing with binary protocol work and bitmap conversion; built visual drag-and-drop barcode label editor
- Developed barcode scanner auto-detection (50ms timing threshold), customer loyalty system with tier progression, and bulk import/export (CSV, Excel)

#### Worker Activity Monitor

*AI-Powered Desktop App | Flutter, Dart, Python, MediaPipe, Win32 FFI, SQLite*

- Built a dual-process desktop app (Flutter UI + Python ML sidecar via JSON streaming) for AI-powered employee productivity tracking with zero cloud dependency
- Integrated MediaPipe FaceLandmarker (468-point face mesh) for real-time Eye Aspect Ratio calculation, 3D head pose estimation, and iris gaze tracking at ~5 FPS
- Implemented system-level mouse/keyboard tracking through Win32 FFI with per-second granularity and per-minute aggregate storage
- Developed combined attention state machine (Active, Watching, Suspicious, Idle) fusing physical activity data with eye-tracking signals

- Engineered browser URL tracking via COM automation for 6 browsers and smart video detection covering 30+ streaming platforms
- Built shift lifecycle management with crash-resilient resume and professional PDF report generation with activity timelines

### **TicketFlow — Queue & Appointment SaaS**

*Multi-Tenant SaaS Platform | Next.js, TypeScript, PostgreSQL, Prisma, NextAuth.js*

- Designed a multi-tenant SaaS platform (Organization > Branch > Counter) with a 452-line Prisma schema and 15+ relational models
- Developed 65+ secured REST API endpoints with Zod validation, JWT authentication, and middleware for auth, license gating, and role verification
- Implemented 5 user roles with granular permissions, drag-and-drop homepage builder (19+ section types), and real-time queue management with sound notifications
- Integrated RSA-2048 license management with domain binding and QR-based camera check-in for events

### **Luxury In Motion Dubai**

*Production Client Website | Next.js, React, TypeScript, Tailwind CSS, Framer Motion*

- Delivered a premium car rental website for a Dubai-based luxury vehicle company — designed, developed, and deployed within 2 weeks
- Built fleet showcase with 20+ luxury brand filtering, online booking system, SEO-optimized SSG, and mobile-first responsive design
- Integrated secure payment options (Visa, Mastercard, Google Pay, crypto) and Trustpilot testimonials; live at [luxuryinmotiondubai.com](https://luxuryinmotiondubai.com)

## **EDUCATION**

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### **Self-Taught Developer**

Continuous learning through production project development, official framework documentation, and structured online courses. Deep expertise built by shipping real-world applications across web, desktop, and AI/ML domains.