

Muhammad Ahmed

Software engineer and systems architect. I build software where AI agents do the work and people make the calls.

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Summary

Fourteen years shipping software across embedded C, native and cross-platform mobile, backends, IoT and AI agents. Remote since 2014, with teams in Canada and China. Nearly eight years owning the mobile app at Vizzn, used by over 700 construction and trucking companies. I design systems end to end, from device protocols and event pipelines to trust models for AI agents, and I build them. Designer and builder of PRCHD, where a developer takes a story from tracker to pull request on a phone, with the agents running on a computer they own. Architect of Pehra Pro, an AI-native fleet platform on NATS JetStream and TimescaleDB. Led a mobile team of three, ran scrum for two more, and lead engineering at Velzosoftware, a company I co-founded in 2024.

Experience

Engineering Lead and Technical Co-founder · Velzosoftware

2024-present

Prototype-to-production engineering: turning AI-built MVPs into secure, scalable software for real customers.

- Own the architecture across Velzosoftware's products, write it as specs for AI coding agents, and review every change before it merges.
- Designed and built PRCHD: a macOS host (Tauri and Bun), iPhone, iPad and Android apps (Flutter), and a cloud relay that never stores content. Claude Code, Codex and Grok behind one event schema; a developer lane over Tailscale, from story to pull request, and a team lane in Slack with recipes and webhook triggers. Built in 96 days, with 39% of the code in tests. Live on the App Store and Google Play.
- Architecting Pehra Pro, an AI-native fleet platform: a TCP gateway for Teltonika and GT06 trackers, NATS JetStream and KV, PostgreSQL, TimescaleDB and MapLibre, as a modular monolith in process roles. A 33,000-line spec written before the code, and over 3,000 tests.
- Built and launched Snap Receipt (iPhone and Android) and QuickPeek (macOS). Moved Snap Receipt from consumers to trade contractors when the usage data said so.
- Built MCP servers that can't destroy data, by construction: read-only or append-only tool sets enforced by tests, behind OAuth with PKCE or hashed, revocable tokens.
- Published three Flutter packages on pub.dev under the verified velzosoftware.com publisher: libtailscale, guided_tour and photo_markup.

Senior Software Engineer, Mobile and Backend · Vizzn

Remote · team in Canada · Nov 2018-Aug 2026

Software for heavy construction: dispatch and scheduling, trucks, fleet and fueling, safety and project management.

- Owned the mobile app end to end, for over 700 construction and trucking companies: published it to the App Store in April 2019, then shipped two or three releases a month to both stores until August 2026.
- Kept the app 99.8% crash-free at that pace.
- Led a team of three mobile developers: planned their stories, reviewed their merge requests and owned their releases.
- Built the apps in Flutter, with development and production builds kept apart.
- Designed and built Node.js microservices over highly relational data in Dgraph.
- Introduced in-app guided tours to onboard new users, a pattern other teams at Vizzn then adopted.
- Interviewed mobile developer candidates with Vizzn's co-founder.

Independent · Flutter and open source

2017-2018

- Built EntrenaPro, a 40-screen coaching app, for iPhone and Android in four months on Flutter before 1.0, including Stripe payments in Dart without an official SDK.
- Published open-source packages: stripe_api, month_picker_strip and cupertino_range_slider for Flutter; hapify and Fastify plugins for NATS, Mongoose, Redis and OrientDB on npm.

Software Engineer, Backend and Mobile, and Scrum Master · MiID Cloud

Remote · team in China · Dec 2014-Jun 2017

3D product customization in the cloud, VR commerce and e-commerce, for companies that sell merchandise.

- Scrum Master for the Android and iOS teams: ran the scrum events and the board, and helped the product owner manage the backlog.
- Built backend APIs on Node.js, hapi, MongoDB and Elasticsearch, documented in Swagger and delivered through Jenkins and Docker.
- Designed and built the Android and iOS apps.

Software Engineer, iOS and Android · VenExel Technologies

Oct 2012-Nov 2014

- Built native Android (Java) and iOS (Objective-C) apps, with interfaces designed for each phone and tablet.

Selected work

Snap Receipt · Reads every line of a supply-counter receipt, files it under the right supplier and costs it to the right job. · ahmedprime.dev/projects/snap-receipt

Vizzn · The mobile app for construction crews: today's schedule, where the equipment is, and updates from the job. · apps.apple.com/ca/app/vizzn-app/id1451322123

247 Track · A tracking company's app for its customers: live location, trips and engine commands. Built and published in 2018, still shipping, with over 1,000 downloads. · ahmedprime.dev/projects/247-track

All projects · PRCHD, Pehra Pro, QuickPeek, SqwrL, FieldAudit Pro, LaunchLens, CoachTrack and ShipLock, each with the decisions behind it. · ahmedprime.dev/projects

Capabilities

AI-native development: agent harnesses, approval flows, MCP servers with scoped access, Claude Code, Codex and Grok workflows, spec-driven development, retrieval with cited sources, LLM evals, token budgets.

Architecture: event-driven systems, modular monoliths, offline-first sync, trust and security models, cost as a design input.

Backend: TypeScript, Node.js, Bun, Hono, Fastify, hapi, gRPC, Zod, Drizzle ORM, Go, Java.

Messaging and data: NATS, JetStream and KV, MQTT, Redis and BullMQ; PostgreSQL, TimescaleDB, SQLite, Turso, Cloudflare Durable Objects, MongoDB, Dgraph, Elasticsearch.

Mobile, desktop and web: Flutter and Dart, Swift (SwiftUI, AppKit), Rust (Tauri), React, Android (Java), iOS (Objective-C).

Infrastructure: Google Cloud (GCP), Docker and Docker Compose, Coolify, Fly.io, Cloudflare Workers, Tailscale and WireGuard, GitHub Actions, Sentry, Prometheus, Grafana, OpenTelemetry.

Delivery: Scrum, code review, mobile release management, Jira, Shortcut.

Embedded and IoT: PIC microcontrollers in C, ESP8266, GSM, MQTT.

Education

Master of Computer Science · 2011

BS Computer Science · 2009

Diploma, Instrumentation and Process Control · 2007

Diploma of Associate Engineer, Electronics Technology · 2006