Amine Belkadi

CTO | Engineering Manager | Staff Engineer Devops | Senior Full Stack Engineer

Email: ajbelkadi@gmail.com | Phone: (929)469-9353 | LinkedIn: linkedin.com/in/belkapi

---

Professional Summary

With over **15 years of experience** transforming industries through technology, I bring deep expertise in **fintech, real-time communication systems, and AI-driven technologies**. I've architected scalable systems that process millions of data points in real-time, revolutionizing how traders analyze market information. At **TradeUI**, I pioneered the integration of advanced machine learning with real-time market data to create predictive trading tools that give users a competitive edge. My innovative work with **WebRTC at Bizwire** enabled seamless live streaming solutions, while my contributions at **IsometricAI** redefined mobile user experiences across platforms. Passionate about solving complex problems and committed to technical excellence, I consistently deliver solutions that drive business growth and create exceptional user experiences.

Professional Experience

Revv - Auto Industry SaaS/AI
Senior DevOps/Full Stack Engineer - | January 2025 – Present

Enterprise Automotive ADAS Platform Development & Infrastructure

- Designed and deployed cloud-native infrastructure using the Massdriver platform with Terraform, implementing multi-environment deployment pipelines (production, staging, test) with automated CI/CD workflows and running on AWS services for container orchestration and infrastructure-as-code practices.
- Architected and implemented a comprehensive database migration framework using Knex.js, incorporating advanced PostgreSQL features like temporal data tracking, revision control, and automated schema versioning across production, staging, and development environments.
- Developed a sophisticated React-based frontend using Next.js 14 with TypeScript, implementing a monorepo structure with Turborepo for optimal build performance across multiple production applications and shared packages.
- Built enterprise-grade workflow automation system with sophisticated business process management, including work order lifecycle management, technician assignment workflows, status tracking, and automated billing integration with Stripe and CCC (Collision Care Center) systems.

- Developed an advanced feature flag system with granular account-level toggles, supporting 19+ distinct features with atomic transaction support and audit trails.
- Designed sophisticated state management architecture using TanStack Query (React Query) with custom hooks, implementing optimistic updates, caching, and real-time data synchronization for work orders and estimates.
- Optimized application performance with code splitting, lazy loading, and bundle optimization, reducing initial load times by 40% for complex automotive diagnostic workflows.
- Built a comprehensive UI component library, implementing design system patterns with Tailwind CSS and NextUI for a consistent user experience.
- Implemented enterprise-grade authentication using Auth0 with Role-Based Access Control (RBAC), supporting a multi-tenant architecture and granular permission management.
- Established comprehensive testing infrastructure utilizing Jest and React Testing Library to ensure high-quality code and confidence in automated deployment pipelines.
- Implemented comprehensive product analytics using PostHog for user behavior tracking, feature adoption metrics, and A/B testing, enabling data-driven product decisions.
- Established monitoring and observability with DataDog integration, structured logging, error tracking, and performance monitoring across a distributed microservices architecture serving automotive repair shops nationwide.

Technologies: *TypeScript, Node.js, React 18, Next.js 14, PostgreSQL, Knex.js, Terraform, Massdriver, Turborepo, TanStack Query, Auth0, PostHog, Pendo, AG-Grid, Tailwind CSS, NextUI, AWS (S3, RDS, EC2), Docker, Kubernetes, Redis, Stripe API, CCC Integration, DataDog, GitHub Actions, Jest, React Testing Library, ESLint, Prettier*

TradeUI – Fintech Startup
CTO / Founding Engineer | January 2018 – 2022

- **Architected a game-changing fintech platform** using Python and websockets, enabling **real-time data processing** for stock and option flow analysis.
- Integrated advanced **machine learning models** to drive predictive analytics, sentiment analysis, and chart pattern recognition, empowering traders with actionable insights.
- Developed and deployed **reinforcement learning algorithms** for trading bots, optimizing for HFT, swing trading, and day trading strategies with a **15% profitability boost**.
- Built **XGBoost + NLP models** for sentiment analysis and used XGBoost for feature importance extraction to optimize multiple trading setups.
- Designed and implemented scalable **websocket infrastructure using Node.js** to handle **millions of real-time market data points per second**.
- Containerized and orchestrated the entire data pipeline with **Docker**, enabling seamless deployment and horizontal scaling of the real-time market data hose.
- Architected a distributed **MariaDB** solution with data sharding and read replicas to support real-time streaming to thousands of concurrent users.

- Designed and launched a **cross-platform mobile app** and a dynamic social community feature, boosting user engagement.

FastCompany

Engineering Manager & Senior Software Engineer | September 2018 – January 2025

- Led the development of a high-performance analytics and CMS platform using **React, Node.js, Redis, and WordPress**, optimized with **AWS and Fastly**.
- **Pioneered generative AI and LLM/RAG integration**, enhancing content indexing and search capabilities using vectors/embeddings, resulting in a **significant increase in user search engagement**.
- Managed end-to-end software lifecycles, delivering reliable, scalable solutions that exceeded business expectations.
- Led a team and contributed personally to a complex data and content migration from a custom-built CMS to a vendor-managed system, leveraging expertise in **React, Node.js, and AWS**.

Inc Magazine

Senior Software Engineer (Backend, Deployments, Frontend) | Product/Engineering Manager | July 2014 – January 2025

- Directed a transformative migration of Inc.com to a modern stack with **React, Next.js (6+ years of expertise), and Laravel**, slashing page load times by **25%**.
- Optimized backend systems with **Laravel, Eloquent, and Redis**, streamlining APIs and deployment pipelines for peak performance.
- Built **Kudos** (licensing e-commerce platform) from the ground up, coding the full stack, configuring servers, and implementing robust security.
- Transitioned to a **Product/Engineering Manager role for Kudos**, leading a growing team as the platform scaled to generate **millions annually in sales**.
- Collaborated on responsive frontend designs using **React, Next.js, and D3 charts**, while developing mobile apps with **React Native and Flutter**.

SproutSMS - Enterprise Cloud Communication Platform

Full-Stack Developer | Lead Architect

- **Architected and developed SproutSMS**, an enterprise-grade cloud communication platform serving multiple providers with **99.9% uptime reliability**.
- Built a **unified API layer** supporting **Twilio, SignalWire, and Telnyx** for SMS broadcasting, power dialer, and cloud calling functionality.
- Designed and implemented a **MySQL database cluster** with optimized queries and a **RabbitMQ-based distributed messaging system** with 4 parallel queues for **high-throughput SMS processing**.

- Integrated a **Redis caching layer** for real-time data caching, session management, and broadcast counter tracking.
- Developed a **Progressive Web App (PWA)** with offline capabilities, push notifications, and a mobile-responsive design.
- Implemented multi-user worker processes with **automatic scaling** and a real-time analytics dashboard using **Chart.js**.
- Ensured **enterprise-grade security and compliance** by building content filtering, DNC checking, and robust CSRF protection.

Independent Developer / Consultant

November 2010 – August 2014

- Developed **WebRTC-powered applications for Bizwire**, enabling one-to-one and one-to-many video/audio streaming for flawless real-time communication.
- Created cross-platform mobile apps for **IsometricAI Company** using Java, **Flutter, and React Native**, delivering exceptional experiences on Android and iOS.

Machine Learning & AI Experience

Gymfit – Health & Fitness startup (Side Project)

• Built a comprehensive AI-powered social fitness platform with conversational AI assistant (GymfitAI) using Grok API, Langchain, and Model Context Protocol (MCP).

• Architected complex Langchain chains with custom chain composition, implementing sequential and parallel chain execution for multi-step AI workflows. Designed prompt templates with variable injection, integrated conversation memory into chains for context persistence, and built conditional chain routing based on user intent and conversation state with RAG capabilities Short and Long term memory and tool use.

• Developed a custom Laravel MCP server with 8 tools and 9 resources, enabling AI to access user data, execute actions (workout logging, reminders, progress tracking), and provide personalized fitness guidance. Seamlessly integrated Langchain agents with MCP tools for dynamic function calling and tool selection

• Implemented real-time streaming AI responses with memory extraction, conversation summarization, and dynamic context building for intelligent, context-aware conversations

• Built React.js/TypeScript frontend with modern state management (Redux, React Query), TailwindCSS, and responsive design supporting mobile and desktop experiences

• Architected Laravel 12.0 backend with PostgreSQL/Redis, RESTful APIs, WebSocket real-time features, queue management with Horizon, and Docker containerization

• Integrated payment processing (Stripe), media processing (FFmpeg), OAuth authentication, job scraping system, affiliate/referral system, and e-commerce functionality

Technologies: React.js, TypeScript, Laravel, PHP 8.2/8.3, Groq API, Langchain, MCP, MySQL, Redis, Docker, TailwindCSS, Vite, WebSockets, Stripe

Diffusion Models

- Implemented custom **Stable Diffusion models** for generating financial chart visualizations, translating textual market descriptions into visual chart forecasts.
- Developed a specialized **ControlNet variant** for precise control over the generation of financial patterns and formations for educational materials.
- Fine-tuned existing diffusion models to generate hyper-realistic financial data visualizations for client presentations.

Computer Vision & AI for Behavior Analysis

- Developed **LLAMA vision + custom regression neural networks** to score body fitness.
- Implemented **real-time AI-powered code quality analysis** using vision models.
- Used **MediaPipe** for body analysis and **OpenCV** for human behavior detection.

Fine-Tuning Image Models

- Fine-tuned **FLUX.1** and developed custom models for image-based analysis.
- Created and trained **flux-dev-lora-trainer** for domain-specific applications.

Large Language Model (LLM) Fine-Tuning

- Fine-tuned **LLAMA 3B** for domain-specific NLP applications.
- Integrated **DeepSeek, Claude, and OpenAI** models into AI-driven applications.

AI Tools & Platforms

- **TensorFlow & PyTorch** for training deep learning models.
- **Weights & Biases (WandB)** for model tracking and optimization.
- Experience in **supervised, unsupervised, and reinforcement learning (RL)** techniques.

Java Experience

- **Android Development:** Built several Android mobile applications using Java with Android Studio, focusing on responsive UI/UX, API integrations, real-time data handling, and offline caching strategies.
- **Automated Trading System:** Developed a Java-based automated trading application, implementing algorithmic strategies to analyze market data, execute trades, and manage risk. Integrated with third-party APIs and designed for modularity to support strategy customization and backtesting.

Education

University of Central Florida

- Bachelor of Science in Management/Entrepreneurship – Spring 2010
- Minor: International Business

Computer Programming Institute, Fes, Morocco

- Software Development with C++ and Visual Basic – 1999

Certifications

AWS Certified Machine Learning - Specialty

- **Earned: 2025**
- Demonstrates expertise in building, training, tuning, and deploying machine learning models on AWS, validating skills in selecting appropriate services, designing scalable architectures, and implementing cost-optimized, secure, and reliable ML workflows.

Languages

- **English:** Fluent
- **French:** Fluent
- **Arabic:** Fluent
- **Moroccan Arabic (Darija):** Native