IBRAHIM KHAN JAGWAL

FULL-STACK SOFTWARE ENGINEER | AI AUTOMATION | SAAS | BUSINESS SYSTEMS

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PROFESSIONAL SUMMARY

Full-Stack Software Engineer and Computer Science student with hands-on experience building production-oriented SaaS platforms, business management systems, AI-assisted engineering workflows, secure communication products, ERP-style applications, lead intelligence systems, e-commerce platforms, and cloud-deployed web products. Experienced across frontend and backend architecture, database modeling, REST APIs, authentication and authorization, AI integration, background processing, Dockerized deployment, Linux infrastructure, application security, technical SEO, and production troubleshooting. Strong focus on modular architecture, multi-tenant systems, automation, OWASP-aligned development practices, and translating real operational requirements into maintainable software.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, PHP, SQL, C, C++, HTML5, CSS3
Frontend: React.js, Next.js, Tailwind CSS, responsive interfaces, server-side rendering, component architecture
Backend: Node.js, Express.js, Laravel, REST APIs, route-controller-service-repository architecture, background workers
Data: PostgreSQL, MySQL, MongoDB, Prisma ORM, Redis, schema design, migrations, indexing, query optimization
AI and Automation: LLM APIs, AI agents, multi-agent workflows, RAG, document intelligence, AI chatbots, MCP, n8n, workflow automation
DevOps: Docker, Docker Compose, Linux, Ubuntu Server, Nginx, Git, GitHub, GitHub Actions, Vercel, AWS EC2, Cloudflare, SSL/TLS
Security: RBAC, MFA workflows, tenant isolation, input validation, secure secret handling, encrypted storage, E2EE architecture, OWASP Top 10 aligned practices
Testing and Web Quality: Playwright, API testing, automated validation, Lighthouse, on-page SEO, technical SEO, performance optimization

PROFESSIONAL EXPERIENCE

Full-Stack Software Developer | Software Development Company, Karachi

February 2026 - Present

- Design and develop SaaS products, ERP modules, AI-enabled applications, automation platforms, and internal business systems across frontend, backend, database, and deployment layers.
- Build modular Node.js, Express, TypeScript, Prisma, PostgreSQL, and Redis services with clear route, controller, service, repository, validation, and persistence boundaries.
- Implement authentication, RBAC, tenant ownership checks, MFA-related flows, secure configuration, server-side validation, API authorization, and other OWASP-aligned controls.
- Integrate AI for document processing, conversational interfaces, information extraction, classification, workflow execution, development automation, and business decision support.
- Deploy and troubleshoot Dockerized applications on Linux infrastructure using Nginx, SSL/TLS, Cloudflare, DNS, internal container networking, databases, and production environment configuration.
- Perform application-level technical SEO and performance optimization, including pages that achieved 100/100 Lighthouse SEO scores.

Web Developer | ASTRIV | Remote

2025 - Present

- Develop responsive web applications and reusable interfaces, integrate APIs, improve performance and usability, and troubleshoot production-facing frontend issues.
- Work with Git-based development workflows, modern JavaScript frameworks, structured source control, and maintainable component patterns.

Frontend Developer Intern | MechaFuze | Remote

2025 - 2026

- Built responsive frontend interfaces, reusable components, API-connected functionality, and participated in debugging, testing, and iterative product improvements.

SELECTED ENGINEERING PROJECTS

Autonomous Multi-Agent Software Engineering Pipeline

Technologies: AI Agents, LLM APIs, GitHub, Git, automated testing, deployment automation

- Built an agentic development workflow that reads GitHub issues, retrieves the target repository, analyzes requirements and code context, generates targeted fixes, validates changes, runs tests, and prepares validated updates for production deployment.
- Separated planning, code modification, validation, testing, correction, repository operations, and deployment into specialized agent responsibilities instead of relying on one unrestricted model.
- Added feedback loops so failed tests or validation return changes to the correction stage before promotion, reducing the risk of blindly shipping generated code.
- Connected repository and deployment operations to move approved fixes from issue discovery through implementation and server delivery with minimal repetitive manual work.

Multi-Tenant School Management and ERP Platform

Technologies: Next.js, TypeScript, Node.js, Express, Prisma, PostgreSQL, Docker, RBAC, MFA

- Designed a multi-tenant school operations platform covering organizations, campuses, students, classes, sections, subjects, teachers, enrollment, attendance, examinations, results, fees, payments, refunds, taxation, statements, and administrative workflows.
- Implemented role-based permissions, controlled onboarding, tenant ownership validation, account security, and cross-tenant protection so one organization cannot reference or modify another tenant's records.
- Structured backend modules around route-controller-service-repository boundaries and enforced business validation at the service layer instead of relying on frontend restrictions.
- Extended the platform beyond student CRUD into financial, operational, academic, and administrative workflows designed around real school processes.

Secure End-to-End Encrypted Chat and File Sharing Platform

Technologies: Next.js, TypeScript, Node.js, Express, Prisma, PostgreSQL, browser cryptography, E2EE

- Designed a privacy-focused communication system with browser-generated cryptographic identity material, client-side message encryption, client-side file encryption, and ciphertext-only server storage.
- Kept plaintext private keys outside the application server and used public encryption/signing material plus cryptographic challenge-response concepts to prove identity ownership.
- Designed authentication around username, password, and user-held cryptographic identity material, with shareable unique usernames for chat discovery instead of exposing raw public keys as user identifiers.
- Minimized server-visible metadata to what is required for routing, encrypted storage, and delivery, and designed virtualized message rendering for large conversation histories.

Hospital Management System

Technologies: Next.js, TypeScript, Node.js, Express, Prisma, PostgreSQL, REST APIs, RBAC

- Designed a database-driven hospital management system for organizing patient, staff, department, appointment, admission, and operational records within a single administrative platform.
- Modeled normalized relational entities, primary and foreign key relationships, validation rules, and referential integrity to support highly connected healthcare workflows without duplicating critical records.
- Structured backend services around modular API boundaries and role-based access so administrative and operational actions can be controlled by responsibility instead of exposing unrestricted system access.
- Designed the system for maintainability and future expansion into billing, pharmacy, laboratory, reporting, and additional hospital workflows while keeping the core data model consistent.

Lead Intelligence and Automated Prospecting Platform

Technologies: Next.js, Express, TypeScript, Prisma, PostgreSQL, Redis, Playwright, Lighthouse, Docker

- Developed a self-hosted lead intelligence platform that discovers businesses and opportunities from public web sources, enriches records, audits websites, and organizes prospects for human review.
- Used browser automation and asynchronous processing for dynamic sources, with Redis-backed background jobs separating scraping, analysis, enrichment, and qualification from normal application requests.
- Integrated Lighthouse-based website auditing to identify performance, SEO, accessibility, and technical quality signals that can help qualify business opportunities.
- Designed CRM-style lead states, opportunity context, source tracking, review stages, and outreach queues while prioritizing open-source and self-hosted infrastructure where practical.

Intelligent E-Commerce Platform with MCP Integration

Technologies: Next.js, React, TypeScript, Node.js, Express, Prisma, PostgreSQL, Model Context Protocol, Docker

- Built an e-commerce platform around products, catalog data, customers, orders, shopping workflows, and administrative management with reusable backend business services.
- Integrated Model Context Protocol concepts to expose controlled commerce capabilities to AI clients and agent workflows without providing unrestricted database access.
- Separated normal application authorization from AI tool execution so MCP-enabled operations still respect business rules, validation, and permission boundaries.
- Designed the integration to support AI-assisted product discovery, contextual search, customer support, product information retrieval, and administrative automation.

ADDITIONAL ENGINEERING SYSTEMS

- AI Business Documentation and Knowledge Platform: built document-ingestion, structured information extraction, RAG-based retrieval, business knowledge search, summarization, requirements extraction, and chatbot-style access to organization-specific information.
- Real Estate Marketplace and Management Platform: developed property listings, search and discovery, inquiries, administration, structured property data, responsive interfaces, and SEO-focused public pages.
- Community and Society Management Platform: designed resident/member records, administrative workflows, notices, requests, operational records, financial/service data, and role-based access for community management.
- AI Customer Support and Business Chatbot: integrated LLM-driven conversational workflows with business context, structured prompting, automation, WhatsApp-oriented message processing, human review paths, and downstream actions.
- Open-source contributor and active GitHub developer maintaining public repositories and working with reusable engineering workflows, issue tracking, source control, browser automation, AI tooling, self-hosted software, and production deployment practices.

EDUCATION

Bachelor of Science in Computer Science

Federal Urdu University of Arts, Science and Technology, Karachi | Currently pursuing | Coursework: Data Structures and Algorithms, Database Systems, Operating Systems, Networks, Software Engineering