

Muhammad Ashir

Software Engineer

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[Linkedin](#) | [Github](#)

Skills

Languages: Typescript, SQL, Python, Golang

Technologies & frameworks: React.js, HTMX, NEXT.js, Express.js, Django, Fastify, React Native, AWS, EC2, DynamoDB, S3, Lambda, Elasticsearch, Kubernetes, Docker, Tailwindcss, HTML, CSS, tRPC, GraphQL, Firebase, N8N.

Work Experience

HectorLabs – Senior Software Engineer

Remote (Buh, RO) | Oct 2025 – Present

- Architected a production-grade automated security reconnaissance platform combining a TypeScript Playwright crawler and a Python LangGraph multi-agent orchestration engine over PostgreSQL.
- Designed a parallel multi-agent vulnerability detection system (IDOR, access control) using directed graph orchestration with modular worker specialization and concurrent state merging.
- Engineered an LLM-augmented crawler with dynamic route deduplication that eliminated redundant parameterized crawling (e.g., /user/:id), drastically reducing crawl overhead.
- Built an agentic, multi-step LLM form automation capable of autonomously executing complex authenticated workflows and generating structured security artifacts.
- Implemented deep API surface mapping via intelligent network interception, capturing filtered XHR/Fetch traffic, auth headers, and structured request/response telemetry.
- Designed a normalized 14+ table PostgreSQL schema with indexed deduplication constraints and a structured findings engine supporting severity classification and evidence tracking.
- Developed a CI/CD-ready CLI with autonomous and human-in-the-loop execution modes for flexible security testing pipelines.

Innovator's DNA – Senior Software Engineer

Remote (Utah, USA) | Oct 2024 – Present

- Engineered SONA, a multi-tenant SaaS platform supporting 5 distinct brands in a monorepo, backed by a 101-table PostgreSQL schema and 30+ fully type-safe API routers.
- Built production-grade AI systems, including a RAG-powered chatbot using Anthropic Claude, OpenAI embeddings, and pgvector to enable semantic search across large-scale educational content.

- Designed and implemented an AI-driven Voice of Customer (VoC) tagging agent with confidence scoring, human-in-the-loop approval, automated summarization, and downstream analytics integration.
- Engineered scalable content chunking, embedding generation, and semantic indexing pipelines for courses, modules, lessons, quizzes, and research artifacts.
- Developed 7,000+ lines of end-to-end type-safe tRPC APIs and a resumable data migration system with parallel processing and S3-backed checkpoints.
- Implemented enterprise-grade authentication and authorization, including SAML SSO, fine-grained RBAC across org hierarchies, and secure session management.
- Integrated Stripe, AWS S3, CloudWatch, and transactional email systems while delivering AI-powered research, assessment, reporting, and certification workflows at scale.

Dunicot – Senior Full Stack Developer

Remote (Karachi, PK) | Jul 2022 – Oct 2024

- Developed an In-House PTAAS for vulnerability and pentest reporting with React.js and Express.js.
- Developed and maintained automation systems with Django and React.js to run performance benchmarks, control firewalls, get systems information, and perform other tests.
- Integrated Celery for queuing and monitoring tests.
- Refactored API endpoints from Python to Golang for concurrency, resulting in a decrease of response latency up to 90%.
- Crafted dashboards for admins and pentesters with IAM to ensure RBAC.

Fixelcloud – Senior Software Developer, Team Lead

On-site (Lahore, PK) | Jan 2021 – Jul 2022

- Led the team in building a CRM and Sales Navigator platform from scratch.
- Improved app throughput by 30% using Nest.js and Postgres.
- Implemented SSR with Next.js, resulting in 30% faster TTP (Time-To-Print) and better search ranking.
- Mentored junior developers and managed Git-based workflows.
- Containerized services with Docker and orchestrated agile sprints.