

AREEF SYED

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Summary

Full stack software engineer with 6+ years owning applications from the interface to the database to the deploy, and an M.S. in AI & Machine Learning. Builds React and Next.js front ends over Python (FastAPI, Django, Celery) and Node.js services, designs the relational schemas underneath them, and ships the whole thing on Google Cloud Platform (GCP), Docker, and Kubernetes with Continuous Integration/Continuous Deployment (CI/CD). Recent work is AI-heavy: a Retrieval-Augmented Generation (RAG) copilot with third-party production users, an AI code-review GitHub App, and an agent monitoring platform. Proven track record raising team delivery metrics as a lead. U.S. work authorized, no sponsorship required.

Technical Skills

AI & GenAI: Large Language Model (LLM) integration, Generative AI (GenAI), AI coding agents & AI code review, agentic AI, Retrieval-Augmented Generation (RAG), vector search & embeddings, tool / function calling, agent evaluation, drift detection & benchmarking, prompt optimization, Model Context Protocol (MCP), LangChain, OpenAI, Anthropic & Gemini APIs, PyTorch, YOLOv8, Prophet, self-hosted model serving

Python: Object-Oriented Programming (OOP), FastAPI, Django, Flask, Celery, SQLAlchemy, Pydantic, pytest, asyncio, plugin / registry architectures, refactoring & maintenance

Frontend: React, Next.js (App Router), TypeScript, JavaScript, Tailwind CSS, MUI, Radix / shadcn, Chart.js, Recharts, Three.js, component libraries & design systems, Progressive Web Apps, Core Web Vitals

Cloud & Orchestration: Google Cloud Platform (GCP) – Cloud Run, Artifact Registry; Kubernetes & KEDA autoscaling, Docker & Docker Compose (multi-service stacks, multi-stage builds), AWS (S3, ECR, ECS), Vercel, Fly.io, Convex, Ansible, nginx

APIs & Protocols: RESTful API design & versioning, gRPC & gRPC-Web, Protocol Buffers (Buf, ConnectRPC), microservices, API gateway, backend-for-frontend, Node.js, event-driven & task-queue architecture (Celery / Redis, scheduled workers), WebSocket, Server-Sent Events (SSE), webhooks, OAuth2, JSON Web Tokens (JWT)

CI/CD & Quality: GitHub Actions, CI/CD pipeline automation, test automation (Playwright, pytest, Vitest), automated pull-request checks, Software Quality Assurance (SQA), code review & peer review, engineering metrics & KPIs, Service Level Agreement (SLA) enforcement, structured logging

Data & Storage: PostgreSQL, MySQL, Redis, Supabase, pgvector, FAISS, S3 / MinIO, Extract-Transform-Load (ETL) pipelines, Power BI, analytics dashboards

Process: Agile / Scrum, Jira, Git & GitHub, technical design documentation, requirements gathering, cross-functional stakeholder alignment, mentoring & coaching engineers

Experience

Carmel Labs

Mar 2026 – Jul 2026

Forward Deployed Engineer

Python, TypeScript, Next.js, Node.js, PostgreSQL, Docker, CI/CD

- Designed and built AgentStatus across the full stack, pairing Next.js dashboards with Python and Node.js services for drift detection, behavior checks, efficiency scoring, and anomaly alerting, with JSON Web Token authentication spanning both tiers.
- Shipped AgentDiff, a GitHub App that runs automated pull-request checks and AI-driven code review as CI/CD status checks, enforcing coding standards on every merge and cutting manual review load.
- Delivered an enterprise knowledge assistant from first backend pipeline to interactive UI in under 3 weeks, integrating 5 enterprise data sources (Gmail, Zoom, Calendar, GitHub, webhooks) behind a hybrid retrieval and knowledge-graph layer.
- Engineered protocol-level support for Model Context Protocol (MCP) Streamable HTTP transport, implementing session management and dual JSON/SSE response handling, validated against live production servers.

AuctionSoftware Inc

Feb 2019 – May 2024

Senior Frontend Developer

Python, JavaScript, React.js, Next.js, Node.js, FastAPI, SQL, Jira

- Managed end-to-end development of 80+ data-driven web applications, delivering React interfaces, Python and Node.js backend services, RESTful APIs, and MySQL and PostgreSQL schema design and integration across Agile Scrum sprints tracked in Jira.
- Raised team productivity by 25% as team lead by identifying process gaps and instituting code-review, peer-review, and quality-assurance practices that reduced post-release defects, and by mentoring junior developers to faster onboarding.
- Accelerated development by 80% and cut project delivery from 12 months to 2 months by building a reusable React component library adopted across client projects.
- Lifted user activity by 35% by driving client platforms to a 90% Core Web Vitals score, using engineering performance metrics to target rendering, asset delivery, and front-end optimizations.
- Translated stakeholder requirements into functional specifications for executive dashboards, and led development for Nellis Auctions, a top marketplace for Amazon returns.

Collidascope VR

Sep 2025 – Feb 2026

Virtual Reality Developer Intern (Co-op)

Unity, C#, Webflow, Jira

- Cut code redundancy by 30% and server ping latency by 35% by refactoring a legacy object-oriented C# codebase and increase in-game responsiveness; redesigned the Developer Menu UI for a 40% usability gain.

Projects

Conduit: self-service control plane for hardware load balancers (*Python, Django, Celery, Redis, PostgreSQL, Docker*) **Jul 2026**

- Kept the web tier off the critical path of unreliable hardware: Django views enqueue Celery tasks and read a PostgreSQL cache while Redis-backed workers call the vendor REST API, so operators drain, force-offline, and re-enable load balancer members from a live Chart.js dashboard that never blocks on device I/O.
- Made failure the default assumption, separating retryable transport errors from application errors with exponential backoff capped at 60 seconds and tracking every operation through a pending-to-terminal audit trail, then proved the recovery paths against a fault-injecting device simulator that flaps health and returns errors at a configurable rate, with pytest covering the REST client.

Dayspring: workflow automation platform (*TypeScript, React, Convex, PostgreSQL, Docker, Kubernetes*) **May 2026**

- Replaced a spreadsheet-and-inbox workflow with a single operator console built solo across every tier: a React and Next.js interface (pipeline kanban, profile studio, analytics, credential vault) over a 24-table relational schema with server actions and authentication enforced in route middleware, plus a separate compilation service defined in Protocol Buffers and deployed scale-to-zero on Kubernetes with KEDA autoscaling.
- Directed 12 specialist AI agents under immutable task contracts and a hard daily spend ceiling, exposing the platform to external AI coding agents through a Model Context Protocol (MCP) server with 21 tools plus a secret-gated HTTP bridge that deliberately withholds submit actions so every workflow terminates at a human gate.

Hound: AI-native end-to-end test automation platform (*TypeScript, Next.js, PostgreSQL, Playwright*) **Mar 2026**

- Gave testers a live view of the running browser without VNC, pushing Chrome DevTools Protocol screencast frames over a binary WebSocket with Server-Sent Events fallback, on top of a React authoring and debugging interface, a REST API over a 20-model PostgreSQL schema, and a Docker Compose stack with S3-compatible artifact storage.
- Built an 11-agent AI suite (locator resolution, assertion generation, failure analysis, recovery, test generation) that authors and repairs browser tests automatically, backed by Claude and GPT models with cross-provider fallback.

Klyro (Open Source): embeddable AI copilot, klyro-pro.vercel.app (*TypeScript, Next.js, PostgreSQL, pgvector, OpenAI*) **Jan 2026**

- Reached 1,100+ npm downloads in its first week and production use on third-party sites, shipping every layer solo: a scroll-driven Three.js marketing site, an admin console for persona and knowledge-base management with a conversations inbox, a drop-in embeddable widget with SPA route detection and domain allowlists, and a Supabase PostgreSQL backend.
- Grounded answers in owner-verified content through a Retrieval-Augmented Generation pipeline that ingests PDF, DOCX, and URL sources into chunked OpenAI embeddings over pgvector, then serves top-15 retrieval with keyword re-ranking and inline citations, cutting hallucinated claims to what the knowledge base can support.
- Enforced multi-tenant data isolation at the query layer through user-scoped vector filtering, published the widget to npm as a dual esbuild bundle, and covered the pipeline with 26 Vitest unit tests.

AirLog: voice-first user testing platform, airlog.live (*TypeScript, Next.js, Supabase/PostgreSQL, Python, Docker*) **Nov 2025**

- Built a multi-tenant SaaS end to end that was commercially licensed by an enterprise customer for use inside their own product suite: a Next.js Progressive Web App with voice recorder, drag-and-drop scene builder, and analytics; three JSON Web Token cookie realms isolating super admin, company admin, and tester across 29 tables; and an ETL pipeline transcribing sessions on a self-hosted faster-whisper service written in Python and Flask.
- Eliminated feedback loss on dropped connections with a client-first durable capture queue that persists audio to IndexedDB before any network call, with bounded retries, Wake Lock, and recovery from OS-killed recordings, behind a retrying server proxy and auto-stop machines holding idle transcription cost at zero.
- Turned raw sessions into deliverables stakeholders act on: AI-classified and summarized notes, PDF session reports, shareable public report links, and an admin analytics suite, backed by audit logs and live cost monitoring across every billed third-party service.

Fact Checker: multi-stage LLM verification pipeline (*Python, FastAPI, React, GCP*) **Mar 2025**

- Built both halves in different languages: a Next.js and React interface on an MUI component layer proxying through a backend-for-frontend route into an object-oriented Python FastAPI service, where 25 interchangeable solvers register through a decorator-based plugin registry so verification pipelines recompose without touching the orchestrator.
- Deployed and operated the service on Google Cloud Platform, shipping containers to Cloud Run (8Gi/4CPU) through an automated GitHub Actions pipeline, with parallel Docker Compose and Hugging Face Spaces environments.

Education

Drexel University

Master of Science in Artificial Intelligence & Machine Learning

Mar 2026

Philadelphia, PA

Bharath Institute of Higher Education and Research

Bachelor of Technology, Computer Science

May 2018

India