

Abhiram Adabala

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PROFESSIONAL SUMMARY

Backend, platform, and applied AI engineer with end-to-end ownership across production SaaS, cybersecurity event systems, CRM/student lifecycle platforms, RAG tools, voice agents, workflow automation, and cloud deployment. Experienced taking ambiguous ideas from zero to production: designing data models, building APIs, shaping product workflows, integrating third-party systems, deploying infrastructure, debugging production issues, and hardening systems for real users. Strong in Python, FastAPI, TypeScript, PostgreSQL, cloud infrastructure, distributed systems, and AI-assisted product workflows.

EXPERIENCE

Chief Technical Officer

2026

RECON 2026

Cybersecurity Event Platform

- Led end-to-end technical ownership for a 3-day DEFCON-style cybersecurity fest platform that served 600+ concurrent users across public event pages, participant portals, auth, admin operations, QR/pass flows, treasure-hunt gameplay, incidents, points, teams, sponsors, shop redemptions, storage, and CTF assets
- Built the active full-stack platform with a React 19, TypeScript, Vite, Tailwind PWA frontend and async FastAPI, SQLAlchemy, PostgreSQL, Redis, Alembic, JWT/cookie-auth backend
- Designed Vercel-oriented frontend deployment with SPA rewrites, PWA manifest, production service worker, app-shell caching, offline fallback, API cache exclusions, static asset caching, and no-index headers for hunt routes
- Implemented backend domains across auth, users, participants, incidents, zones, points, teams, treasure hunt, announcements, schedule, shop, partners, and S3-compatible storage using a layered router/controller/service/CRUD/database pattern; the backend handled 600+ concurrent event users without degradation
- Designed production topology around Vercel frontend hosting and a containerized FastAPI API behind Cloudflare/AWS infrastructure with Neon Postgres, Upstash Redis, S3-compatible storage, migrations, and Logfire observability

Lead Software Engineer

Dec 2025 – Present

LearnLynk

Canada / Remote

- Lead engineer behind a production multi-tenant higher-education CRM and student lifecycle SaaS covering lead capture, recruitment, applications, enrollment, attendance, finance, documents, communications, student/recruiter/instructor portals, AI assistants, and partner workflows
- Owned backend, platform, AI, automation, and deployment surfaces across data modeling, tenant isolation, RLS-backed Postgres, auth/RBAC, feature gates, service boundaries, release guardrails, cloud deployment, observability, and production hardening
- Built CRM and student lifecycle modules for leads, persons, contacts, tenant-custom fields, lead activities, notes, tasks, routing rules, applications, entry requirements, programs, intakes, sections, enrollments, attendance, grades, financial holds, invoices, receipts, and documents
- Implemented public and embedded form infrastructure with dynamic lead forms, document forms, form versions, public RLS policies, tenant resolution, conditional rendering, validation, analytics, duplicate checks, captcha settings, and notification flows
- Built automation infrastructure for lead routing, sticky/manual/specialized-team assignment, rule evaluation, tier-weighted performance routing, capacity tracking, workflow triggers, workflow runs, queues, domain events, and operational crons
- Integrated communications, finance, and document systems including Twilio Voice/SMS/WhatsApp, Aircall, Outlook, Stripe, Moneris, Flywire, QuickBooks, PandaDoc, signed PDFs, storage, receipts, invoices, financial holds, and student finance documents
- Built Python AI service with FastAPI, Pydantic-AI, JWT validation, OpenAI/Anthropic adapters, retrieval, embeddings, prompt budgets, token accounting, document extraction, AI assistants, lead briefs, playbooks, insights, website scanning, voice actions, and decision logging
- Owned AWS/Supabase production infrastructure with CloudFront, wildcard TLS, origin-header protection, EC2, Nginx, Docker Compose, rate limits, real-client-IP forwarding, Sentry/Logfire observability, CI/CD, and release gates

AI Product Developer

Sep 2025 – Dec 2025

Innerbhakti

Remote

- Engineered multi-agent GenAI orchestration pipelines for audio and video automation using FastAPI, GPT agents, ElevenLabs, HeyGen, and operator tooling, reducing a 40-hour manual production process by about 90%
- Built stage-level tracing, structured logging, validation models, retry paths, and evaluation pipelines that delivered reliable root-cause analysis across production automation jobs

Software Development Intern

May 2025 – Jul 2025

Dover Corporation

Bengaluru, India

- Developed enterprise RAG search tools and backend APIs with Python, .NET, ASP.NET, pgvector, and ChromaDB for engineering teams working across manufacturing systems and internal knowledge bases
- Measured chunk relevance, embedding similarity, answer accuracy, latency, and throughput against ground truth to improve retrieval quality, source grounding, and enterprise search reliability

AI Engineer

Feb 2025 – May 2025

Indominus Labs

Remote

- Built Voicel, a terabyte-scale call analytics platform that turned raw customer call data into dashboards, performance recommendations, cleaner datasets, and downstream analytics signals
- Designed LLM workflows for summarization, classification, insight extraction, data cleanup, recommendation generation, and dashboard-facing APIs over large volumes of conversational data

AI Researcher

Nov 2024 – Nov 2025

VIT-AP Centre for AIR

Amaravati, India

- Developed multimodal conversational AI combining speech, vision, emotion modeling, memory handling, context management, and sub-2-second response latency
- Benchmarked STT, LLM, and TTS stages for runtime reliability using LiveKit, Deepgram, GPT-4o, Cartesia, FastAPI, WebSockets, structured logs, context loaders, and agent-based processing

AI / Signal Processing Engineer

Additional Experience

Makonis

Remote

- Built an FFT-based noise reduction pipeline for EEG signal cleanup, improving signal quality for downstream analysis and real-time processing
- Implemented a real-time EEG acquisition system with sub-100ms latency for responsive biosignal capture and monitoring across noisy biomedical data conditions

PROJECTS

Consensus KoTH | *Python, FastAPI, APScheduler, SQLite, Paramiko, Docker Compose, HAProxy, pytest* 2026

- Built a distributed King-of-the-Hill cyber-range referee for RECON 2026 that served the live event load while deploying intentionally vulnerable machines across nodes and controlling lifecycle, scoring, ownership validation, enforcement, recovery, telemetry, and dashboards
- Designed quorum-based ownership so teams score only when enough healthy replicas agree; ignored malformed, banned, unhealthy, degraded, unclaimed, and clock-drifted observations
- Implemented start/stop/pause/resume/rotate, rollback-aware recovery, HAProxy routing sync, SSH-based Docker Compose fan-out, baseline capture, drift detection, participant dashboards, admin APIs, logs, claims, telemetry, and team ban/unban controls; the system held up cleanly under 600+ concurrent users
- Built rule enforcement for king-file tampering, root permission drift, persistence mechanisms, port changes, iptables changes, shadow/auth-key changes, repeated active-violation suppression, and warning-to-ban escalation
- Implemented 8 challenge series with 24 vulnerable machines across web, database, Linux privilege escalation, exposed service, deserialization, SSRF, monitoring, and framework vulnerability families

RECON 2026 Event Platform | *React, TypeScript, Vite, FastAPI, SQLAlchemy, PostgreSQL, Redis, Vercel* 2026

- Built full-stack cybersecurity event platform supporting 600+ concurrent users across public event pages, participant authentication, profiles, zone registration, QR/pass flows, admin operations, announcements, incidents, points, teams, sponsors, shop redemptions, storage, and treasure-hunt gameplay
- Implemented React PWA frontend with Router, Zustand, motion tooling, QR generation/scanning, manifest, service worker, app-shell caching, offline fallback, and route-level deployment headers
- Built async FastAPI backend with layered domain architecture, SQLAlchemy async ORM, PostgreSQL, Alembic, Redis, Google OAuth, cookie JWT auth, role boundaries, Logfire, and S3-compatible presigned storage, handling live 600+ concurrent-user event traffic without degradation

Traction AI | *Next.js, FastAPI, PostgreSQL, SQLAlchemy, Alembic, OpenAI, Pydantic-AI, Jinja2* 2026

- Built an AI product that turns a raw founder idea into structured business artifacts including business model, investor summary, problem statement, customer profile, positioning, pitch narrative, and shareable workspace
- Designed backend orchestration for multi-step generation, structured outputs, artifact persistence, server-rendered pitch pages, generated summaries, stable shareable URLs, and machine-readable llm.txt endpoints
- Used validation and schema-first prompts to prevent generic deck filler and keep outputs grounded in founder inputs, market assumptions, constraints, and readiness signals

Kinesys CRM Platform | *FastAPI, SQLAlchemy, PostgreSQL, Vue 3, LiveKit, WebSocket, JWT, Docker* 2025 – 2026

- Built async FastAPI backend with lead CRUD, soft deletes, filtering, pagination, Kanban views, tags, custom fields, automatic stage history tracking, Google OAuth, JWT rotation, and Google Calendar event integration
- Designed timezone-aware appointment scheduling with availability engine, idempotent booking creation, WebSocket messaging, and LiveKit integration for AI voice agent dispatch and room management
- Developed Vue 3 frontend with Composition API, Pinia, Tailwind, Frappe UI, 28 pages, 294 components, 16 stores, Twilio VoIP integration, analytics dashboards, Kanban drag-and-drop, and PWA support

Kinesys Voice Agent | *Python, LiveKit SDK, Deepgram, OpenAI, Cartesia, SIP, WebSocket, Docker* 2025 – 2026

- Built real-time voice AI pipeline using Deepgram STT, GPT-4o-mini reasoning, Cartesia TTS, and Silero VAD for natural phone conversations
- Implemented inbound/outbound SIP calling, runtime agent configuration through job metadata, voicemail detection, human escalation, WebSocket status streaming, and call-control tools

VISU-Reborn | *Python, FastAPI, LiveKit, Deepgram, Cartesia, GPT Agents, WebSocket* 2024 – 2025

- Built real-time Python voice assistant with STT, TTS, VAD, emotion classification, WebSocket interaction, context loaders, structured logs, agent-based processing, and fault-tolerant execution

- Integrated speech, vision, memory, and emotional context into a multimodal assistant loop with component-level tracing and sub-2-second target latency
- Luma Video Automation** | *FastAPI, Pydantic-AI, GPT-5, ElevenLabs, HeyGen, Creatomate, Next.js* 2025
- Built script-to-audio-to-avatar-to-video automation pipeline using GPT scene parsing, typed validation, UUID-based asset manifests, voice synthesis, avatar rendering, and operator dashboard monitoring
 - Designed 9 specialized agents for audio tagging, clause segmentation, pause analysis, avatar configuration, render mapping, and media workflow coordination, reducing a 7–10 minute manual process to roughly 30–40 seconds
- VexiaSearch** | *FastAPI, pgvector, BM25, OpenAI, Supabase, PyMuPDF, Hybrid Retrieval, Reranking* 2025
- Built hybrid RAG system with token-aware chunking, lexical plus vector retrieval, reranking, deterministic citations, source-grounded answers, and 100-page PDF ingestion in under 30 seconds
- Zepp** | *FastAPI, SQLAlchemy, Groq Whisper, Flutter, Dart, Supabase Auth, WebSocket* 2026
- Built real-time transcription platform with WebSocket audio streaming, async FastAPI backend, Supabase Auth, JWT endpoints, transcript history, Flutter MVVM frontend, offline cache, optimistic writes, and cross-platform support
- Clueso Clone** | *Chrome Extensions API, Node.js, Express, Next.js, FastAPI, Gemini API* 2025
- Built product-demo workflow capturing DOM events during screen recording, with Node.js session orchestration and FastAPI ProductAI features for quality scoring, sentiment, summaries, analytics, caching, and translation
- IntelliPost** | *FastAPI, OpenAI Vision, Cloudflare R2, Flutter, Dart, Async SQLAlchemy* 2026
- Built postal workflow where GPT-4o Vision extracts names, addresses, and pincodes from envelope images, with presigned Cloudflare R2 uploads, India Post lookup caching, JWT auth, background processing, and Flutter field workflow
- MatchVerse Recommender** | *Python, XGBoost, implicit BPR, scikit-learn, Pandas, Streamlit* 2025
- Trained XGBoost ranking model with demographic features, achieving 0.815 accuracy and 0.899 ROC-AUC, plus BPR retrieval, popularity penalty, deployable artifacts, explanations, and CSV export
- MemoryWeave** | *YOLO V11, LLMs, Computer Vision, Multi-Agent Workflows, Real-Time Inference* 2025
- Won 1st place at HackSRM 6.0 Open Innovation with a multi-agent system using real-time object detection and LLM-generated narratives to turn visual context into memory-style stories at 30 FPS
- Binance Futures Trading Bot** | *Python, Pydantic, Requests, HMAC-SHA256, pytest* 2025
- Built command-line Binance USDT-M Futures bot supporting six order types, testnet/mainnet modes, HMAC-SHA256 signed requests, Pydantic validation, sensitive log sanitization, and tests

EDUCATION

Vellore Institute of Technology – AP	2023 – 2027
<i>B.Tech in Computer Science and Engineering</i>	<i>Amaravati</i>
Oakridge International School	2019 – 2023
<i>High School Diploma</i>	<i>Bangalore</i>
AWS Academy Graduate	Oct 2025
<i>Cloud Architecting</i>	<i>Amazon Web Services</i>

RECOGNITION

HackSRM 6.0 <i>1st Place – Open Innovation</i>	2025
• Won with MemoryWeave, a multi-agent vision and narrative system using YOLO V11 and LLMs	
AI Bootcamp Speaker <i>VIT-AP University</i>	2025
• Led ML, LLM, and agent-system sessions for 120+ attendees across workshop and bootcamp tracks	

TECHNICAL SKILLS

Languages & Frameworks: Python, FastAPI, JavaScript, TypeScript, SQL, C#, .NET, ASP.NET, Go, C++, Java, Dart

Backend & Data: PostgreSQL, Redis, Supabase, SQLAlchemy, Alembic, pgvector, ChromaDB, MongoDB, REST APIs, WebSockets, GraphQL, JWT, OAuth

AI/ML & Agentic Systems: LLM APIs (OpenAI, Anthropic, Gemini), RAG, embeddings, vector databases, Pydantic-AI, agent orchestration, tool calling, prompt engineering, Deepgram, ElevenLabs, Cartesia, Whisper

Frontend: React, TypeScript, Vue 3, Next.js, Flutter, Tailwind CSS, shadcn/ui, Radix UI, Framer Motion, React Query, Vite

Infrastructure & Security: Docker, Docker Compose, AWS (EC2, S3, CloudFront, Lambda), Vercel, Nginx, HAProxy, CI/CD, Linux, Logfire, Sentry, Playwright, Vitest, pytest, cyber ranges, CTF infrastructure