

Nikhil Rajput

Full-Stack AI Engineer

AI Automation · GenAI · Backend Engineering

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PROFILE

Full-Stack AI Engineer with 2+ years building AI products, automation systems and backend platforms for clients in Australia, South Africa and India. I take a business problem from the first messy conversation through architecture, build, testing, deployment and the production changes that follow — with the deterministic rules, guardrails and human handoffs that keep an AI system trustworthy once real users reach it.

CORE SKILLS

AI & GENAI	LLM APIs, AI agents, RAG, structured extraction, tool calling, guardrails, embeddings, vector search, LangChain, LangGraph, LangSmith, LiteLLM, OpenAI, Gemini, Anthropic, AWS Bedrock	BACKEND	Python, FastAPI, Node.js, Express.js, REST APIs, WebSockets, webhooks, async workers, queues, authentication
FRONTEND	React.js, Next.js, TypeScript, JavaScript, React Native, Tailwind CSS, operational dashboards	AUTOMATION	n8n orchestration, HubSpot/CRM sync, WhatsApp Business API, voice and calling flows, Brevo email, LinkedIn outreach, Gmail/Drive/Sheets, Playwright, webhooks, LLM agents
DATA	PostgreSQL, MySQL, MongoDB, ChromaDB, Weaviate, pgvector, Redis, SQLAlchemy, Prisma	CLOUD & DEVOPS	AWS (EC2, S3, App Runner, CloudFront, SQS, Lambda, Textract, Bedrock), GCP Cloud Run, Docker, CI/CD, Terraform, Vercel

EXPERIENCE

Full-Stack AI Engineer

Nov 2025 – Present

Singaji Software Solutions

Lead AI automation and full-stack delivery across architecture, LLM workflows, backend services, integrations, testing and production iteration.

- Design and ship AI agents, RAG pipelines, structured extraction, tool calling, guardrails and human-in-the-loop workflows for client systems in production.
- Own the surrounding platform — Python, FastAPI, Node.js, PostgreSQL, Redis, n8n, Playwright and AWS — so the intelligent layer sits on infrastructure that holds.
- Set the reliability practices the team works to: structured outputs, validation, provider fallback, observability and defined escalation paths.

Software Engineer

Nov 2024 – Nov 2025

Singaji Software Solutions

Built backend and full-stack applications for international clients across Australia, South Africa and other markets.

- Delivered REST APIs, webhooks, third-party integrations, dashboards, scraping pipelines and data workflows end to end.
- Worked across Node.js, Express.js, Python, FastAPI, React, Next.js, PostgreSQL and MySQL, including deployment and production support.

QA Tester + Developer

Jul 2024 – Oct 2024

Singaji Software Solutions

Started close to product quality: testing real workflows while contributing to development and debugging.

- Ran functional, API, regression and workflow testing; reproduced defects, validated fixes and pushed edge cases back into the build.
- Built the habit of reading a product as its failure modes — still the first thing I do on a new system.

WHAT I'M RELIED ON FOR

- + Takes ambiguous business requirements to a shipped, supported system
- + Owns frontend, backend, data, agents, infrastructure and deployment
- + Works directly with international clients across timezones
- + Draws the line between deterministic rules and model reasoning, deliberately
- + Designs for failure: validation, fallback, observability, human escalation

Selected client systems

Production work, shown with what it replaced, the controls around it and the confirmed stack.

Multi-Tenant AI PropTech SaaS

South Africa · Property Technology · Node.js, LangChain, ChromaDB, n8n

One tenant-isolated data layer behind every property workflow.

- Configured session-managed Playwright scrapers to aggregate, sanitise and ingest 250+ rental listings a month from diverse portals.
- Orchestrated n8n workflows that generate AI-written listing content and syndicate it to Facebook Marketplace, Pages and Instagram, cutting manual data entry by over 90%.

Node.js, Express.js, TypeORM, PostgreSQL, ChromaDB, LangChain, Redis, Socket.IO, Playwright, n8n, WhatsApp, Facebook Graph API, Docker

AI Legal Intake & Safety Infrastructure

Australia · Legal Technology · Python, FastAPI, Twilio, AWS Bedrock

Qualifies claimants without ever issuing legal advice.

- Designed configurable conversation flows with structured fact extraction, lead scoring and human escalation before any lawyer review.
- Engineered inbound and outbound safety gates — crisis detection, restricted-response rules, output validation — across 16+ documented guardrails.

Python, FastAPI, Twilio, AWS Bedrock, Claude, PostgreSQL, App Runner, SQS, CloudFront, HubSpot, Terraform

Conversational Voice AI & Marketing Agents

India · Voice Automation · Python, FastAPI, Plivo, GCP

Live calls that carry their context into WhatsApp.

- Built a voice telephony stack on FastAPI and webhooks against an explicit latency budget — ~150ms speech-to-text, 400-600ms model, 200-400ms to first audio — instrumented per turn.
- Automated initial lead scoring and high-volume enquiry handling, scaling daily capacity to absorb the work of four to five marketing executives.

Python, FastAPI, Plivo, Gemini, Groq, Claude, Sarvam, Whisper, WebSockets, WhatsApp, PostgreSQL, Docker, GCP Cloud Run

Enterprise Data Acquisition Platform

Australia · Data Platform · Python, Playwright, AWS Bedrock

Council portals in, enriched and routed CRM leads out.

- Designed resilient Playwright workers tracking 20+ Australian council portals, harvesting and indexing 100+ development applications daily.
- Embedded ABR ABN Lookup and RP Data enrichment, then wired a React dashboard to Monday.com, removing manual lead routing and data entry by 95%.

Python, Playwright, AWS Bedrock, AWS Textract, React.js, PostgreSQL, Monday.com, ABR API, RP Data, EC2, S3, Docker

Construction Slab Layout & Take-Off

Australia · Construction Technology · Python, Flask, Shapely

Slab plans in, pod layouts and site measurements out.

- Built the pod placement pass over Shapely geometry: full pods across each slab, then fractional pods on the perimeter, checked against the real boundary rather than a bounding box.
- Wired results into the engineering Google Sheet — slab thickness, pod height, area and rebates in, calculated quantities back — behind a Flask, MongoDB and React workspace.

Python, Flask, Shapely, NumPy, Plotly, MongoDB, Google Sheets API, JWT, React, Unicorn

Omnichannel MarTech SaaS

USA · Social & Advertising Automation · Next.js, Node.js, OAuth 2.0

Five networks, organic and paid, from one console.

- Designed OAuth 2.0 flows across 5+ platforms — Meta, TikTok, YouTube, LinkedIn and X — for automated personalised publishing at scale.
- Built a centralised paid advertising layer spanning Meta, TikTok, Google, LinkedIn and X Ads with objective mapping and consolidated spend reconciliation.

Next.js, React.js, Node.js, Express.js, PostgreSQL, OAuth 2.0, Meta Ads, TikTok Ads, Google Ads, LinkedIn Ads, X Ads

PRODUCTS I BUILD ON MY OWN

WebPilot AI

PERSONAL PRODUCT · LIVE ON GOOGLE CLOUD

Live across 15 Terraform-managed Google Cloud services. Gemini learns a browser task once; repeat runs replay a frozen typed spec through Playwright with zero model calls. A broken step is diagnosed, patched, sandbox-verified, then promoted as a new version.

Next.js, NestJS, Playwright, Gemini, Google ADK, Cloud Run, Cloud Tasks, Pub/Sub, Cloud SQL

AI Career & Job Intelligence Platform

PERSONAL PRODUCT · IN DEVELOPMENT

Scheduled connectors for LinkedIn, Indeed, Naukri and Wellfound with parsing, deduplication and Weaviate vector matching, on Redis and Taskiq workers behind a LiteLLM gateway.

Next.js 16, FastAPI, PostgreSQL, Weaviate, Redis, Taskiq, LangGraph, LiteLLM

Financial Analytics AI Platform

PERSONAL PRODUCT · RAG + TEXT-TO-SQL

Parses 100+ page PDF statements into clean transactions, then answers questions through a hybrid RAG layer over LangChain, pgvector and generated SQL. React dashboards chart 1,000+ transactions, cutting auditing turnaround by around 85%.

Python, FastAPI, React, PostgreSQL, pgvector, LangChain, SQLAlchemy 2.0

ADDITIONAL DELIVERED SYSTEMS

Cross-Tool Workflow Automation — n8n layer joining HubSpot, WhatsApp, voice calling, Brevo email, LinkedIn outreach, Gmail, Drive and Sheets, with bounded LLM agents and a retry queue.

Real Estate CRM Bridge — FastAPI layer normalising third-party CRM listings, contacts and enquiries into a multi-tenant schema, with Firebase sync to React and Expo clients. (Australia)

Enterprise Educational ERP — 1,000+ students per academic session across admissions, GPS-geofenced QR attendance and placement, supporting 20+ faculty. (India)

Precision Agriculture Platform — Nine satellite analysis maps per field from Sentinel Hub with an ISRO VEDAS overlay, in a React and OpenLayers workspace. (India)