

Archit Aggarwal

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EDUCATION

Maharaja Surajmal Institute of Technology

B.Tech. – Electronics & Communication Engineering (ECE), Specialization in AI/ML

Delhi, India

2021 – 2025

EXPERIENCE

AI Automation Engineer Intern

Sep 2026 – Present

Radiant Horizons Hospitality Pvt Ltd (HoBo) – Delhi, India

- Built **HoBo Tracker** from scratch (**Next.js**, **Supabase**) with a **Capacitor Android app** and native **FCM** push actions, used daily by the team on Android and Windows to track **~90 properties** (20 hotels, ~70 villas/homestays) through onboarding.
- Designed automated workflows (task escalation, scheduled **pg_cron** reminders, follow-up pipelines) that replaced **15–20 manual processes**, saving an estimated **30–40 hours per week**.
- Built a **JSON onboarding import** for the multi-tenant HoBo Enterprise PMS (**Zod**-validated, dry-run preview, **transactional commit**), cutting hotel setup from **weeks to 5–10 minutes** and onboarding **5 hotels in 3 days**.

Data Analyst

Nov 2025 – May 2026

D.P. Jindal Group – Delhi

- Developed a **Transformer-based sentiment-analysis model for Hinglish** text, reaching **92.1% accuracy**, by fine-tuning **XLM-RoBERTa** with added classification heads, layer freezing, and learning-rate schedulers.
- Combined the Transformer with an **LSTM-Attention** hybrid to capture Hinglish code-mixing, and cut inference time by **30%** via **model quantization** and batch-inference optimization.

PROJECTS

F.R.I.D.A.Y – Personal AI Assistant | *Python, Electron/React, three.js, WebSocket*

Apr 2026 – Present

- Built a Windows assistant (**37 action modules**) that controls the PC (apps, files, browser, screen/OCR), **Gmail**, **Calendar**, **Spotify**, and phone/laptop via **FCM**, with Hindi/Hinglish speech and a **lip-synced 3D face** (3 avatars).
- Engineered an **emotion and sentiment engine** fusing **text, voice, and facial-expression** signals into one smoothed user state, plus an appraisal model (mood, drives, memory) that shapes her tone and expressions.
- Orchestrated **10 coding agents** (Claude Code, Codex, Gemini CLI, Hermes) and a **multi-specialist team mode** (plan, parallel work, review, merge) with a shared, pre-scanned **SKILL.md** library.
- Integrated **reverse engineering** (REA, jadx, ILSpy) to recover and rebuild Electron, .NET, and Android apps as clean projects, plus **self-healing** that prepares tested fixes for her own errors.
- Architected **Sentinel** (confirmation gate) and **Verifier** (outcome re-check) to close a critical safety gap; backed by a **NVIDIA → Gemini → Ollama** fallback chain, **SQLite + FAISS** memory, and **980+ tests**.

HoBo Enterprise PMS – Competitive Analysis & WhatsApp | *Next.js, Prisma, Docker*

Sep 2026 – Present

- Built the **Competitive Analysis** module (**~32K lines**, **96 API routes**): review and social-mention scrapers, **OCR-based ad analyzer**, ad-creative studio (templates, Indian languages, video), and sentiment alerts.
- Modified open-source **MiroFish** (multi-agent simulation) into an **ad performance predictor**, reworking audience and metric logic to score click intent and approval across simulated traveller personas (**Dockerized**).
- Built the **hobotext** WhatsApp gateway (per-hotel **encrypted sessions**, signed HTTP both ways) using **Baileys** only as the bridge; all request handling and PMS integration are custom.

Apex Job Agent – Autonomous Application Agent | *Python, FastAPI, Playwright*

Mar – Jun 2026

- Built a **Playwright** applier for LinkedIn/Indeed Easy Apply and ATS platforms (Greenhouse, Lever, Workday, iCIMS) using **14 priority-ordered selectors** and an **LLM form-field analyzer** that fills unknown forms from a profile.
- Engineered two-stage scoring (heuristic filter, then concurrent LLM scoring across **7 providers**) with a **FastAPI + WebSocket** dashboard; multi-user hardened (scrypt auth, Fernet keys, isolation), **1,400+ tests**.

TECHNICAL SKILLS

Languages & Frameworks: Python, asyncio, TypeScript, JavaScript, Next.js, React, three.js, FastAPI, Flask, Prisma, Zod, SQL, C++

AI & Agentic Systems: LangChain, LangGraph, multi-agent orchestration, prompt engineering, structured output, multi-provider LLM routing (OpenAI, Claude, Gemini, Mistral, NVIDIA NIM, OpenRouter, Ollama, Groq), RAG (FAISS), NLP, Transformer fine-tuning, faster-whisper, WebRTC VAD

Data, Mobile & Infra: PostgreSQL, Supabase, SQLite, Capacitor (Android), Firebase FCM, Docker, Playwright, pg_cron, Railway, Vercel, GitHub Actions, Git

Security & Foundations: JWT, bcrypt, Fernet, SQLCipher, RBAC, multi-tenant isolation; Data Structures & Algorithms, Operating Systems, Computer Networks, DBMS