DIBYA SAROTHI SIMANTA

Full-Stack Software, Backend Systems & AI Engineer

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PROFESSIONAL SUMMARY

Independent full-stack and backend systems engineer building multi-tenant SaaS platforms, schema-validated AI workflows, civic transit tools, and resilient Selenium browser automation in Python, Django, PostgreSQL, TypeScript, and Next.js. Philosophy: *"Evidence first. AI second."*

TECHNICAL STACK

Backend & Data:	Python, Django 6 / DRF, FastAPI, PostgreSQL (pg_trgm), Redis, Celery, SQLite, Stripe Webhooks
Frontend & Desktop:	TypeScript, Next.js 16 (App Router), React 19, Tailwind CSS, Tkinter, MapLibre GL
Automation & AI:	Selenium WebDriver, BeautifulSoup4, Pydantic Validation, Gemini API, Gated RAG, Pandas, NumPy
Infra & Game Dev:	Docker & Compose, Linux / Bash, Nginx, Git / GitHub Actions, C#, Unity 6 (URP / HFSM)

FEATURED ENGINEERING PROJECTS & OPEN-SOURCE SYSTEMS

ClientForge — Enterprise Workforce & Multi-Tenant Operations OS

Python, Django 6, PostgreSQL 16, Redis 8, Celery, Next.js 16, Stripe API | clientforge.is-a.dev

- Engineered TenantContextMiddleware scoping ORM QuerySets per organization alongside RBAC, Firebase SSO, and idempotent Stripe Checkout billing.
- Built deterministic payroll/invoicing engines, an AES-256 document vault with SHA-256 integrity seals, and immutable HMAC activity audit logs.

MediGuard AI — Evidence-Grounded Pharmaceutical Safety & Verification

Python, Django 6, PostgreSQL, Next.js 16, Pydantic, Firebase Admin | mediguard.dibyasarothi.is-a.dev

- Built a defensive RAG verification pipeline over 43,075 normalized DGDA drug records and openFDA cross-references (~13k LOC, 145/145 automated tests passing).
- Implemented client-side GS1 DataMatrix / QR verification and bilingual pg_trgm fuzzy lookup with strict zero-hallucination citation minting.

Bhara Koto — Public Transit Route Graph & Fare Reference Platform

Django, PostgreSQL, Redis, Next.js, TypeScript, MapLibre GL

- Modeled Dhaka Metro Rail (MRT Line-6) and bus routes as directed graphs with distance-stage pricing and sub-50ms Redis composite route caching.

Flight-Deal-Finder & Selenium Browser Automation Suite

Python 3.10+, Selenium 4, BeautifulSoup4, SerpApi, Twilio WhatsApp, requests-cache | GitHub

- Engineered Flight-Deal-Finder with SQLite API caching (requests-cache), earning direct code-quality approval from FlightPowers founder Matan Rabi.
- Built 6 Selenium automation bots: Gym Class Scheduler (persistent Chrome profiles, Win32 CIM lock cleanup, auto-retry), Speedtest ISP X Bot, Google Forms Scraper, IG Follower, TinDog OAuth Swipe, and Cookie Clicker.

Ashenfall — 2D Action-RPG Systems & Python Desktop Utilities

C#, Unity 6 (URP), Physics2D | Tkinter, OpenTDB API, Pandas

- Engineered 60 FPS kinematic combat loops with 120ms input buffering and hierarchical boss state machines; also built Quizzler and Flashy French desktop apps.

EDUCATION, CREDENTIALS & LEADERSHIP

- **HSC Science (2025):** GPA 5.00 / 5.00 | **SSC Science (2023):** Golden GPA 5.00 / 5.00 (Prothom Alo GPA-5 Achiever)
- **IELTS Academic (2026):** Overall Band 7.0 (CEFR C1 Certified — IDP / British Council)
- **Certifications:** Supervised Machine Learning (Stanford / DeepLearning.AI); 100 Days of Code Python Bootcamp (57h, Udemy)
- **Leadership & Honors:** Cadet Sergeant, Bangladesh National Cadet Corps (BNCC); 1st Prize Liberation War Documentary Feature