

RAJ KHAN

Full-Stack Python Developer

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PROFESSIONAL SUMMARY

Full-Stack Python Developer specializing in role-based, multi-user web applications with transactional data integrity — built using Flask, SQLAlchemy, and PostgreSQL. Currently pursuing a B.Sc. in Programming and Data Science at IIT Madras.

EDUCATION

B.Sc. in Programming and Data Science

2023 — Ongoing

Indian Institute of Technology Madras (Online Degree Program)

Relevant Coursework: Mathematics for Data Science I & II, Statistics for Data Science I & II, Database Management Systems, Data Structures & Algorithms using Python, Programming Concepts using Java, Modern Application Development I, System Commands (Linux)

- Diploma in Programming, a foundational credential within the BS curriculum.

Higher Secondary (12th Grade)

2018

West Bengal Council of Higher Secondary Education — Percentage: 86.40%

CERTIFICATIONS

AI Agents Intensive Course — Google & Kaggle | [Certificate Link](#)

June 2026

Completed a 5-day hands-on program covering AI agent design, evaluation, and deployment.

SKILLS

Backend: Python, Flask, FastAPI, SQLAlchemy (ORM), Flask-Login, RESTful Routing, REST APIs

Frontend: JavaScript, HTML5, CSS3, Bootstrap 5.3, Jinja2

Database: PostgreSQL, SQLite, SQL, Relational Schema Design & Normalization

Tools & DevOps: Git, Linux, Bash, Pytest, Unittest, Jupyter, VS Code, Antigravity IDE

Data & Analytics Tools: Advanced Excel, Google Sheets, Matplotlib, Power BI, Tableau

Practices & Other: Application Architecture (MVC / Blueprint Pattern), Role-Based Access Control (RBAC), AI-Assisted Development (Prompt Engineering — ChatGPT, Claude, Gemini), Technical Documentation

PROJECTS

Trekking Management Application | [GitHub](#) | [Case Study](#)

May 2026 – July 2026

Python, Flask, SQLAlchemy, SQLite, Flask-Login, Werkzeug, Jinja2, Bootstrap 5

- Designed and built a full-stack web application for 3 distinct user roles (Admin, Staff, User) using Flask, SQLAlchemy ORM, and Bootstrap 5.
- Structured the application across 5 independent Blueprints via the application factory pattern for modularity and maintainability.
- Engineered a transactional slot-booking system across 4 relational models (User, StaffProfile, Trek, Booking), guaranteeing zero overbooking and accurate slot restoration on every cancellation.
- Implemented a seven-state trek lifecycle with role-based access control (RBAC) across three account types.
- Enforced cascading integrity rules, including automatic staff unassignment on blacklisting and non-destructive, audit-preserving booking cancellation.
- Built multi-field search and filter querying (SQLAlchemy) across all 4 core entities (treks, staff, users, bookings), scoped per role for targeted, secure data access.
- Authored ~2,800 lines of backend Python and 27 role-scoped templates (~4,250 lines of Jinja2/HTML).
- Built a seeding harness generating realistic demo data (24 users, 10 staff, 18 treks) across all lifecycle states.

Personal Portfolio Website

July 2026

HTML5, CSS3, JavaScript, JSON-LD, Custom Domain Deployment

- Designed and built a 5-page, ~5,200-line responsive personal portfolio from scratch using vanilla HTML5, CSS3, and JavaScript, deployed on a custom domain (officialrajkhan.me) with a dedicated case-study page for the Trekking Management Application.
- Implemented dark/light theme switching with localStorage persistence and pre-paint theme initialization to eliminate a flash of incorrect theme on load.
- Engineered for search visibility with Schema.org JSON-LD structured data, OpenGraph/Twitter Card meta tags, an XML sitemap, and robots.txt.
- Built an asynchronous, fetch-based contact form and integrated a downloadable PDF resume served directly from the site.