AASVEER SINGH

Results-driven AI/ML Engineer | Generative AI, LLMs & RAG | Python, SQL, FastAPI

Amritsar, Punjab | +91 8837782106 | singhaasveer@gmail.com | linkedin.com/in/aasveer-singh | github.com/singhaasveer-lab

PROFESSIONAL SUMMARY

Results-driven AI/ML Engineer who builds end-to-end AI applications with Python, SQL and FastAPI. Skilled in Machine Learning, NLP, Generative AI, LLMs, RAG and prompt engineering, with a focus on recommendation engines and OCR-based document intelligence. Experienced in integrating LLM APIs (OpenAI, Gemini, Claude), designing multi-stage AI pipelines, serving them through REST APIs and evaluating AI outputs.

TECHNICAL SKILLS

- **Languages:** Python, SQL, C/C++, JavaScript, TypeScript
- **AI / ML:** Machine Learning, Scikit-learn, Feature Engineering, Recommendation Systems, Forecasting (Prophet)
- **Generative AI & NLP:** LLMs, Generative AI, RAG, Prompt Engineering, NLP, Text Vectorization (TF-IDF), Cosine Similarity, Information Retrieval, AI Output Evaluation
- **AI Models & Platforms:** OpenAI API, Google Gemini API (GenAI SDK), Anthropic Claude API, Claude Code, Hybrid ML + LLM pipelines
- **Backend & APIs:** FastAPI, Flask, Streamlit, REST APIs, JWT Authentication, SQLAlchemy, Python-dotenv
- **Data & Databases:** Pandas, NumPy, Matplotlib, Data Analysis, OCR, PDF Parsing (PyPDF2), SQLite, MySQL, PostgreSQL
- **Frontend:** React, TypeScript, Vite, Tailwind CSS, HTML, CSS, React Context API
- **Tools & Concepts:** Git, GitHub, Jupyter Notebook, Google Colab, OOP, DBMS, Data Structures, Problem Solving

PROJECTS

InterviewIQ | AI-Powered Mock Interview Platform 2026

GitHub: github.com/singhaasveer-lab/InterviewIQ

- Built a full-stack mock interview platform where students practice technical, behavioral (STAR) and system-design interviews, with adaptive difficulty and both MCQ and open-ended questions generated on demand by Gemini.
- Designed AI evaluation that scores each answer on technical depth, communication clarity, problem solving and executive confidence, with model answers, strengths, weak spots and a prep roadmap.
- Added a Resume ATS Scanner, a Job Description Analyzer with match scoring, a RAG knowledge base with semantic search, a voice interview room (speech-to-text) and a live coding sandbox that evaluates time/space complexity.

Tech Stack: React 19, TypeScript, Tailwind CSS, Python, FastAPI, SQLAlchemy, SQLite, JWT Authentication, Gemini API, Vite, Express

Wingman | AI-Powered Conversation Intelligence Platform (RAG + NLP) Aug 2026 - Sep 2026

GitHub: github.com/singhaasveer-lab/wingman_ai

- Co-built an AI platform that reads chat screenshots with OCR and analyzes interaction signals such as warmth, reciprocity and engagement, turning them into next-step recommendations, reply strategies and date plans.
- Designed a multi-stage pipeline: Screenshot OCR, NLP Signal Analysis, Conversation DNA profiling, RAG Retrieval, Decision Brief and Reply Strategies.
- Implemented a local RAG knowledge base using TF-IDF vectorization and cosine-similarity retrieval, with SQLite persistence, a FastAPI REST backend and a Streamlit interface.

Tech Stack: Python, FastAPI, Streamlit, OCR, NLP, RAG, TF-IDF, Cosine Similarity, SQLite, REST APIs

GiftBro AI | Hybrid ML + Generative AI Gift Recommendation System Jul 2026 - Aug 2026

GitHub: github.com/singhaasveer-lab/giftbro-ai

- Built a hybrid recommender that ranks real catalogue items before any generation happens: candidates are filtered and scored with TF-IDF, cosine similarity and weighted scoring against the recipient's relationship, occasion, interests, personality, budget and things to avoid.
- Used the Gemini LLM as a personalization layer that explains why each gift fits, how to personalize and present it, and drafts a message to include, so the AI never invents products.
- Exposed the pipeline through a FastAPI backend with SQLite-based history and a Streamlit frontend.

Tech Stack: Python, Scikit-learn, Pandas, TF-IDF, Cosine Similarity, FastAPI, Streamlit, SQLite, Gemini API

SmartQueue AI | Intelligent Queue Management & Analytics System 2026

GitHub: github.com/singhaasveer-lab/smartqueue-ai

- Built a digital queue system with real-time token generation, live queue position and wait-time estimates, multi-counter staff dispatch, priority handling and a public live queue display.
- Added AI queue intelligence for congestion monitoring, bottleneck detection, queue clearance estimation and traffic surge simulation, plus analytics dashboards with CSV and JSON export.

Tech Stack: React, TypeScript, Vite, Tailwind CSS, React Context API, Lucide React

StudyForge AI | AI-Powered Study Platform for CS Students 2026

GitHub: github.com/akshita-sharda/STUDYFORGE-AI-

- Co-built a full-stack study platform where students upload PDFs and get source-grounded answers through RAG, with Gemini-generated flashcards and quizzes and a local RAG fallback that shows retrieved source text when no API key is set.

- Built study modes (explain simply, hint, debug code, viva practice), a subject library, a revision tracker, a planner and saved conversations, with student accounts using signed tokens and hashed passwords.
- Built the FastAPI backend and Next.js frontend, and wrote an automated test suite for the API, chat, study and planner features.

Tech Stack: Python, FastAPI, Next.js, React, RAG, Gemini API, pytest

EXPERIENCE & LEADERSHIP

Campus Ambassador | Aspire Institute India **Dec 2025 - Present**

- Represent the organization on campus and drive student participation through peer engagement and outreach.
- Coordinate with teams on events and campaigns, strengthening communication and stakeholder management skills.

Member | Entrepreneurship Development Cell (EDC), Amritsar Group of Colleges

EDUCATION

B.Tech, Computer Science & Engineering (AI/ML), Amritsar Group of Colleges 2023 - 2027

Class XII, Shri Guru Harkishan Sen. Sec. School (2023) | Class X, Shri Guru Harkishan Public School (2021)

CERTIFICATIONS

- **Anthropic Claude Academy:** Claude Code 101, Building with the Claude API, Claude Platform 101, Claude 101
- **IBM SkillsBuild:** Introduction to Large Language Models, Machine Learning, AI Practitioner: Ready to Use AI
- **Google Cloud Skills Boost:** Introduction to Generative AI | **Cisco:** Introduction to Modern AI
- **Microsoft Learn:** Introduction to Prompt Engineering with GitHub, Azure Database for PostgreSQL: Vector Search
- **HP LIFE:** Critical Thinking in the AI Era