

VISA JOURNEY AGENT

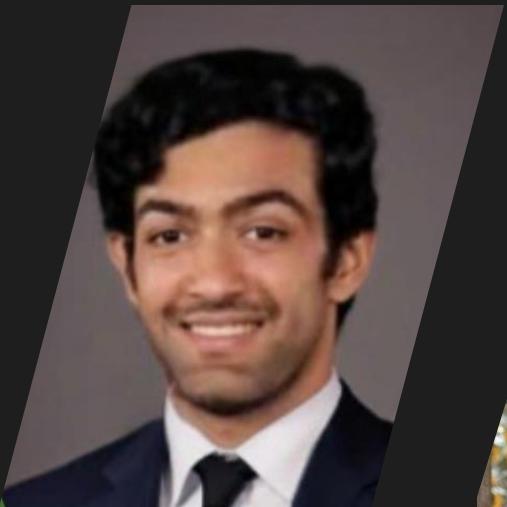
FOR F-1 VISA HOLDERS



MEET THE TEAM



**HARSHAL
KAMBLE**



**ABHAY
PRABHAKAR**



**JENNY
NGUYEN**



PAVITHRA



**JARED
JONES**

WHAT IS THE F-1 VISA?

IN A NUTSHELL

The F-1 visa (Academic Student) enables entry into the United States as a full-time student at a Student and Exchange Visitor Program (SEVP)-certified college, university, seminary, conservatory, academic high school, other academic institution, or language training program; whereas enrollment must be in a course of study leading to a degree, diploma, or certificate.

EMPLOYMENT ELIGIBILITY

F-1 students have limited employment options in the U.S. to support their studies, mainly on-campus work and authorized off-campus training, with strict rules to maintain status:

- **On-Campus Employment:** Allowed without USCIS approval for active students; up to 20 hours/week during terms, full-time during breaks
- **Curricular Practical Training (CPT):** Off-campus, degree-related internships; available after one academic year; requires approval and enrollment in related coursework.
- **Optional Practical Training (OPT):** Up to 12 months total (pre/post-completion); 24-month STEM extension possible for qualifying fields



MOTIVATION

As international students ourselves, we've experienced these challenges firsthand: compliance mistakes can significantly derail academic success and career opportunities.

Students need a proactive journey companion that generates personalized, timeline-aware guidance based on their specific arrival date, from Month 1 arrival to Month 12 CPT preparation, and so on.

AI-powered retrieval and specialized agents can deliver scalable personalization that adapts to each student's situation and keeps them compliant despite constantly evolving regulations.



CHALLENGES IN U.S. IMMIGRATION FOR F-1 VISA HOLDERS

STRICT REGULATION

Immigration rules from USCIS and DHS change frequently, where even minor errors in compliance result in visa revocation or deportation.

POLICY INSTABILITY

Legislative/Administrative shifts create uncertainty—especially concerning work permissions upon graduation

TIMELINE COMPLEXITIES

Benefits like CPT (often available after 1 full year of study) varies by school, surprising many newcomers.

APPLICATION LOGISTICS

Visa applications and work permits can take months longer than posted timelines.

Strict deadlines add constant pressure alongside academic responsibilities.

FRAGMENTED INFORMATION

Official government resources are scattered and technical, with limited support for non-native English speakers navigating complex immigration jargon.

SOLUTION

Chatbot for Guiding Students & Admissions Staff Through the F-1 Visa Process

System Components

- **Knowledge Base**
 - F-1 visa policy data scraped from federal & university sources
 - Chunked, and stored in ChromaDB (vector DB)
- **Agent 1 – Q&A + User Profile Updates**
 - RAG-based question answering
 - Retrieves and summarizes regulations pertaining to user's queries
- **Agent 2 – Timeline & Checklist Coordinator**
 - Generates personalized CPT/OPT timelines and task checklists
 - Highlights critical deadlines and required steps
- **User Interface**
 - Chatbot assistant
 - Dynamic checklist view

DATA SOURCES

1 USCIS

The official federal agency managing immigration benefits and services, providing authoritative regulations, policy updates, and procedural requirements for F-1 visa holders.

2 TRAVEL.STATE.GOV

The U.S. Department of State's official travel portal, offering visa application procedures, embassy/consulate information, and entry requirements for international students.

3 GSU ISSS

University-level guidance translating federal regulations into practical, actionable steps for students, including campus-specific procedures, timelines, and compliance support.

DATA COLLECTION + PREPARATION

1 WEB-SCRAPING & DATA EXTRACTION

Automated web scraping collected policy documents from three authoritative sources using Python (BeautifulSoup, requests).

Content was extracted from the main body while removing navigation elements, headers, and promotional content, then converted to Markdown format for consistent processing.

2 CHUNKING & EMBEDDING

Documents were split into 800-character chunks with 100-character overlap using LangChain's Text Splitter to preserve context across boundaries.

This produced a total of 3,243 text segments that were then converted into dense vector embeddings using the Sentence-BERT model (all-MiniLM-L6-v2)

3 VECTOR DATABASE

All embeddings and their associated metadata (source document, content) were stored in a ChromaDB persistent vector database (SQLite-based), hosted on Google Drive for accessibility and persistence across sessions.

AGENT 1



Knowledge Extraction

Collected and processed immigration knowledge sources (USCIS, DHS, travel.gov, SEVP) to identify and extract relevant F-1, CPT, OPT, and H-1B rules from unstructured policy text



Structured Rule Generation

Converted raw policy text into structured, machine-readable chunks and stored them in a ChromaDB vector database for high-precision retrieval.



RAG-Based Policy Summarization

Built a Retrieval-Augmented Generation (RAG) pipeline: Agent 1 retrieves relevant policy snippets using embeddings and generates accurate rule summaries, action items, and risk ratings

AGENT 2



TIMELINE + CHECKLIST ENGINE

Computes personalized CPT/OPT timelines and auto-generates a structured checklist by combining immigration rules with the student's profile.



POLICY INTEGRATION LAYER

Ingests Agent-1's retrieved policy updates and converts them into actionable tasks, ensuring the assistant's guidance is accurate and up-to-date.



SMART RESPONSE

Interprets user intent and dynamically produces tailored responses by blending RAG results with timeline logic.

USER INTERFACE



INSIGHT

**Captures user details
progressively through a guided
chat workflow, reducing cognitive
load and ensuring tailored visa
guidance.**



FRAMEWORK

Built with a modern UI, gradient components, and clean typography for high readability and user trust.



EXPERIENCE

Two-tab structure separates conversational guidance from procedural checklists, enabling smooth navigation and faster task completion.



LIVE DEMO

EVALUATION

EVALUATION SETUP

Tested 4 key immigration topics using must-have USCIS keywords to measure policy accuracy.

METHOD

Agent-1 retrieved docs + summarized; performance measured by **keyword recall**.

RESULT

3/4 queries scored 1.0 recall
(H-1B requirement timeline, CPT→OPT).

“Specialty occupation” scored 0.5 recall — partial grounding.

Question	Recall	Interpretation
H-1B requirements	1.0	PERFECT — found all required phrases
Earliest filing date	1.0	PERFECT
Specialty occupation	0.5	Partial match (expected, because you only required two keywords)
CPT → OPT	1.0	PERFECT

INSIGHTS

Strong, consistent retrieval and grounded summaries



THANK YOU!