

ChatBot for International Students

Tokey Tahmid
Manas Tiwari
Anirudh Gajjala



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE



Table of Contents

- Agenda
- Background/Context
- The ChatBot Concept
- Implementation
- Demonstration
- Conclusion
- Future Scope
- Q&A

Agenda

- Background and ChatBot Concept
 - International students often face challenges with visa regulations, university policies, and cultural adjustments.
 - We have developed a 24/7 accessible ChatBot that serves as a virtual advisor to answer queries and guide students regarding immigration related questions.
- Technical Details and How We Leverage Google's Gemini API
 - We used Google's Gemini API for fine-tuning the model based on UT's website resources, enhancing the ChatBot's ability to provide accurate and contextually relevant answers.
- Demo, Benefits and Future Developments
 - Demonstration of the ChatBot handling typical queries from international students.
 - Quicker response times, and availability outside of office hours for general queries.
 - Future Scope

The Growing Need for Scalable and Accessible Student Support

- Rising International Student Enrollments
 - Statistics
 - In the past decade, the intake of international students at universities worldwide has increased, with the US being the top-choice.
- Diversity and Inclusion
 - International students enrich our campus with a wide array of perspectives, contributing to a vibrant multicultural community. Their presence enhances the academic experience for all students by fostering global awareness and cultural exchange.
 - It's essential for us to create an inclusive environment that supports the success and integration of every student from around the globe.
- Unique Challenges Faced by International Students
 - Navigating immigration laws adds another layer of complexity to their university experience, affecting their stay and study permissions.
 - Registration complications and compliance with both local and federal laws are further hurdles that can detract from their focus on studies.

INTERNATIONAL STUDENTS | SPRING 2024

International students provide valuable talent in critical disciplines, drive regional economic development and add a global perspective to the university.

1,295

Total International Students

1,000

International Graduate Students

255

International Undergraduate Students

TOP 10 COUNTRIES OF ORIGIN

1. INDIA (209)
2. CHINA (179)
3. BANGLADESH (106)
4. NIGERIA (80)
5. SAUDI ARABIA (64)
6. NEPAL (45)
7. IRAN (40)
8. CANADA (33)
9. SOUTH KOREA (32)
10. GHANA (28)

LOCAL IMPACT

UT international students provide a direct benefit to Tennessee's 2nd Congressional District by contributing **\$42.8 MILLION** and supporting **462 JOBS**

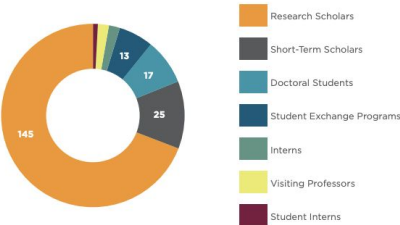
EXCHANGE VISITORS | SPRING 2024

Exchange visitors engage in special programs designed by academic departments, facilitate exchange partnerships, complete student and public-private partnership internships and conduct research. Exchange visitors are a critical part of UT's global partnership and research network.

206

Total Exchange Visitors

EXCHANGE VISITORS BY TYPE



TOP 6 COUNTRIES OF ORIGIN

- 46

1

CHINA
- 31

2

INDIA
- 15

3

BRAZIL
- 13

4

TURKEY
- 13

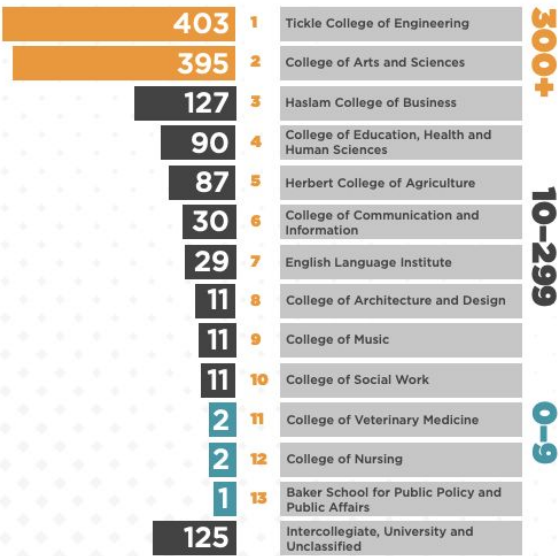
5

SOUTH KOREA
- 9

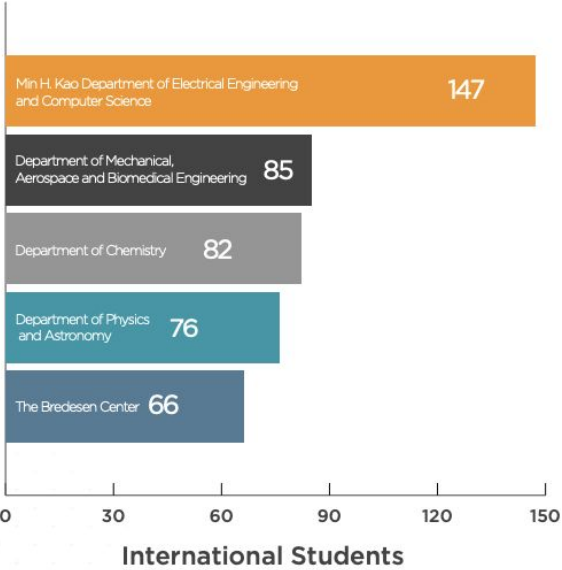
6

GERMANY

BY COLLEGE



TOP 5 DEPARTMENTS



INTERNATIONAL STAFF AND FACULTY | SPRING 2024

International faculty, staff and researchers connect UT to a global research network, fill vital gaps in expertise and promote the university's global presence.

768

Total International Faculty, Staff and Researchers

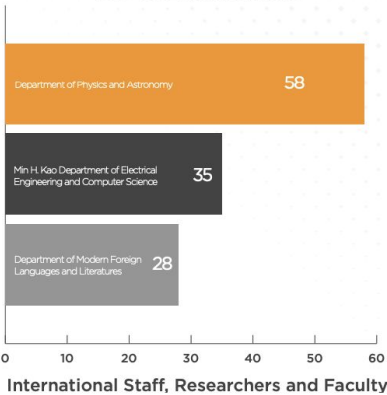
148

International Post-Doctoral Positions

BY COLLEGE



TOP 3 DEPARTMENTS



Bridging the Gap

➤ Role of AI Education

- AI, when used in accordance to the universities' policies, provides personalized guidance tailored to the unique needs of each student. It analyzes vast amounts of data to offer customized advice and learning pathways, enhancing the educational experience.
- By adapting to individual learning behaviors and preferences, AI not only supports but also enhances the student's journey.

➤ How Our ChatBot Helps

- This constant availability ensures that students from different time zones or with varying schedules can receive help exactly when they need it, making education more inclusive and accessible to all.
- This ability to update and refine its knowledge base ensures that the ChatBot remains a relevant and valuable resource throughout the student's educational journey.

Vision and Core Functionalities of the ChatBot

- Challenges for International Students:
 - Struggle with visa processes and adapting to studying abroad.
- Our Objective:
 - Empower students by providing instant access to essential information and support.
 - Ease transition into university life by making resources universally accessible.
- Chatbot Features:
 - Available 24/7, accommodating students in different time zones.
 - Supports multiple languages to assist non-native English speakers.
 - Utilizes AI to deliver tailored responses based on individual queries and backgrounds.
- Scope of Assistance:
 - Provides detailed answers related to visa applications, processing, and required documentation like I-20 and I-94 forms.
 - Assists with travel arrangements and administrative procedures for studying in the US.

Leveraging Gemini's API

- We use Google's Gemini API, to automatically generate textual content.
- Initially we import necessary modules and configure the API with a secure key
- Then we define the `gemini_text_service_call()`, which takes a user's text prompt as input.
- Inside this function, we initialize a `GenerativeModel` named 'gemini-pro' and invoke its `generate_content` method with the given prompt.
- This method interacts with the AI model to process the prompt and produce the text output.

```
1  import google.generativeai as genai
2  import os
3
4  def gemini_text_service_call(input_prompt):
5      genai.configure(api_key="#") # replace with : os.environ["API_KEY"]
6      model = genai.GenerativeModel('gemini-pro')
7
8      response = model.generate_content(input_prompt)
9      return response.text
10
11
12  input_prompt = "Write a story about a magic backpack."
13  output_text = gemini_text_service_call(input_prompt)
14  print(output_text)
```


The ChatBot Web API

- Utilizes Gradio for creating a simple interface.
- Configures the 'gemini-pro' model with an API key in the `gemini_chat_service_call` function.
- Sets context with a training prompt for assisting international students.
- Checks for an existing session, starts a new one if necessary, and maintains conversation history for continuity.
- Handles user prompts seamlessly, continuing the chat with context-aware responses.
- Launches Gradio interface with public sharing options, making the chatbot accessible via a web link.

```
1 import os
2 import gradio
3 import google.generativeai as genai
4
5 has_started_chat = False
6 chat = None
7
8 def gemini_chat_service_call(input_prompt):
9     global has_started_chat, chat
10    genai.configure(api_key="###") # replace with : os.getenv("API_KEY")
11    model = genai.GenerativeModel('gemini-pro')
12    training_prompt = (
13        "Hello, I'm an international student going to University of Tennessee at Knoxville "
14        "having trouble understanding the information on this website: "
15        "https://utkiss.atlassian.net/wiki/spaces/IPFP/pages/20774918/Guides+for+Students. "
16        "I'll ask specific questions about the content in separate prompts. "
17        "Can you help me interpret the information and answer my questions?"
18    )
19    if not has_started_chat:
20        chat = model.start_chat()
21        has_started_chat = True # Set flag after starting chat
22
23    if len(chat.history) < 2:
24        train_response = chat.send_message(training_prompt)
25        print(train_response.text)
26        response = chat.send_message(input_prompt)
27        return response.text
28
29    else:
30        response = chat.send_message(input_prompt)
31        return response.text
32
33 demo = gradio.Interface(
34     fn=gemini_chat_service_call,
35     inputs="text",
36     outputs="text",
37     title="Chatbot for International Students",
38     description=(
39         "This is a helpful assistant for international students. "
40         "You can ask any visa application related questions."
41     )
42 )
43 demo.launch(share=True)
```

Demonstrating the ChatBot in Action

Chatbot for International Students

This is a helpful assistant for international students. You can ask any visa application related questions.

input_prompt

What are the requirements for renewing my student visa?

Clear

Submit

output

****Additional requirements for M-1 students:****

- * A letter of acceptance from your school
- * A transcript of your academic records
- * Evidence that you are making progress towards completing your vocational training program

****How to renew your student visa:****

1. ****Check the expiration date on your visa.**** You should start the renewal process at least 120 days before your visa expires.
2. ****Gather the required documents.**** Make sure you have all of the required documents listed above.
3. ****Complete the Form I-539, Application to Extend/Change Nonimmigrant Status.**** You can download the form from the USCIS website.
4. ****File your application.**** You can file your application online or by mail. If you file by mail, you must use a Form G-1145, E-Notification of Application/Petition Acceptance.
5. ****Pay the filing fee.**** The filing fee for Form I-539 is \$410. You can pay the fee online or by mail.
6. ****Wait for a decision.**** USCIS will review your application and make a decision. You will receive a notice in the mail informing you of the decision.

output

The requirements for renewing your student visa will vary depending on your country of origin and the type of visa you have. However, there are some general requirements that apply to all international students renewing their visas in the United States.

****General requirements:****

- * A valid passport
- * A completed Form I-20, Certificate of Eligibility for Nonimmigrant Student Status
- * Proof of financial support
- * A SEVIS fee receipt
- * A photograph
- * A visa application fee

****Additional requirements for F-1 students:****

- * A letter of acceptance from your school
- * A transcript of your academic records
- * Evidence that you are making progress towards completing your degree program

input_prompt

How do I register for healthcare services on campus?

Clear

Submit

output

To register for healthcare services on campus at the University of Tennessee at Knoxville, you will need to follow these steps:

- Enroll in the Student Health Insurance Plan (SHIP).** All international students are required to have health insurance. You can enroll in SHIP through the university's online insurance portal.
- Activate your insurance card.** Once you have enrolled in SHIP, you will receive an insurance card in the mail. You will need to activate your card before you can use it. You can activate your card online or by calling the insurance company.
- Visit the Student Health Center.** Once you have activated your insurance card, you can visit the Student Health Center for medical care. The Student Health Center is located at 1400 Volunteer Boulevard, Knoxville, TN 37996.
- Present your insurance card.** When you visit the Student Health Center, you will need to present your insurance card. You will also need to pay a copay for your visit. The copay is \$15 for a primary care visit and \$25 for a specialty care visit.

Services offered by the Student Health Center:

- Primary care
- Specialty care
- Mental health services
- Pharmacy

output

- * Laboratory services
- * X-ray services
- * Immunizations
- * Travel medicine

Hours of operation:

- * Monday-Friday: 8:00am-5:00pm
- * Saturday: 9:00am-1:00pm
- * Sunday: Closed

Contact information:

- * Phone: (865) 974-3187
- * Fax: (865) 974-3227
- * Email: studenthealth@utk.edu

Additional information:

- * You can also purchase additional health insurance coverage through the university's insurance portal.
- * The Student Health Center offers a variety of health and wellness programs for students.
- * You can find more information about the Student Health Center on the university's website.

I hope this information is helpful. Please let me know if you have any other questions.

Conclusion

- Recap of the ChatBot
 - Problem Addressed
 - Helping international students with complex administrative processes and cultural adaptation.
 - Solution
 - 24/7 Access
- Technical Details
 - Gemini API
 - Fine-Tuning

Future Scope

- **Integration with UTK ISSS**
- **Tracking history of old conversations**
- **Creating extension for Discord/Slack**



Questions?