TITANS BOT

STREAMLINE CLASS REGISTRATION HASSLE-FREE WITH TITANS BOT

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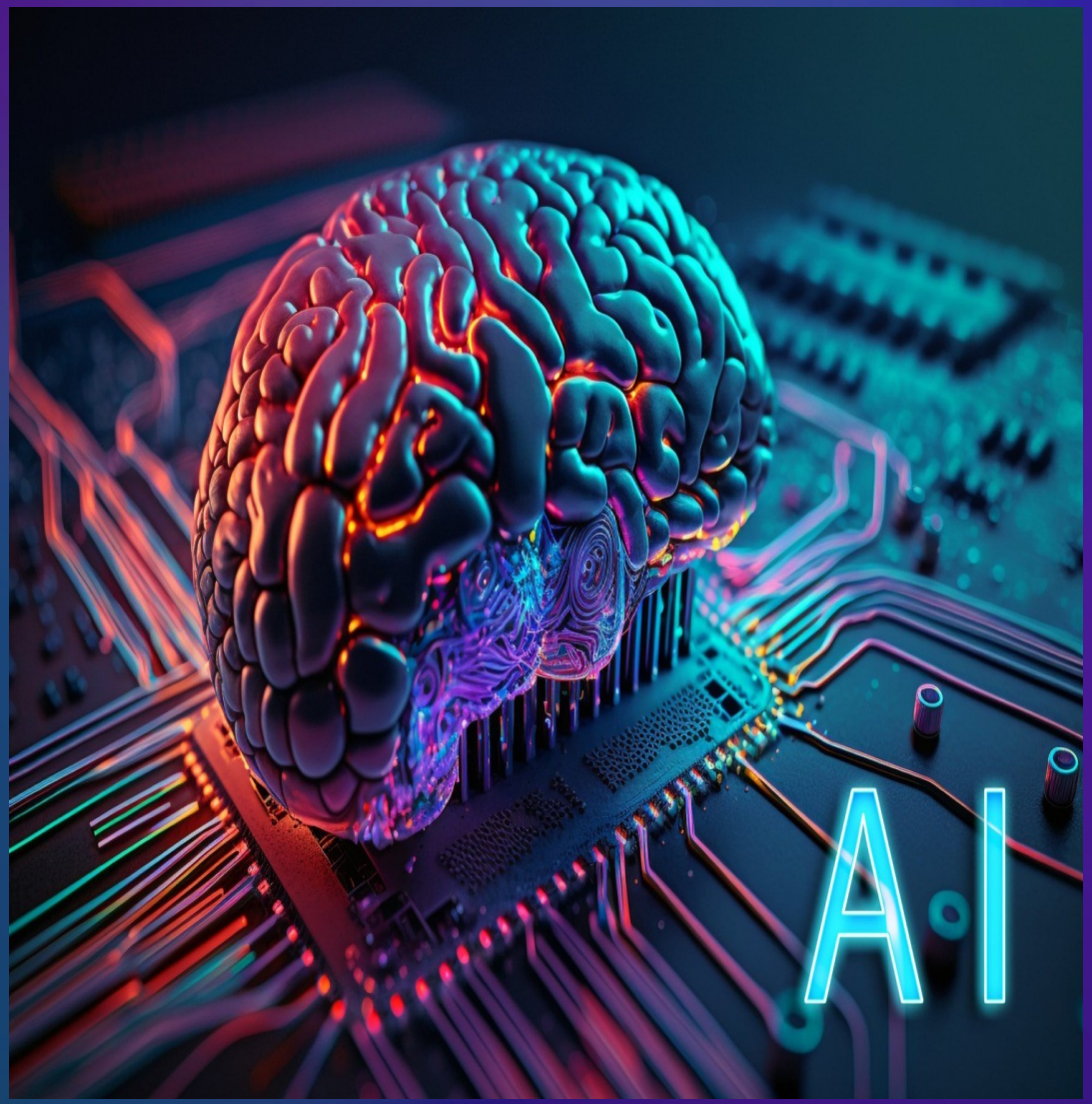
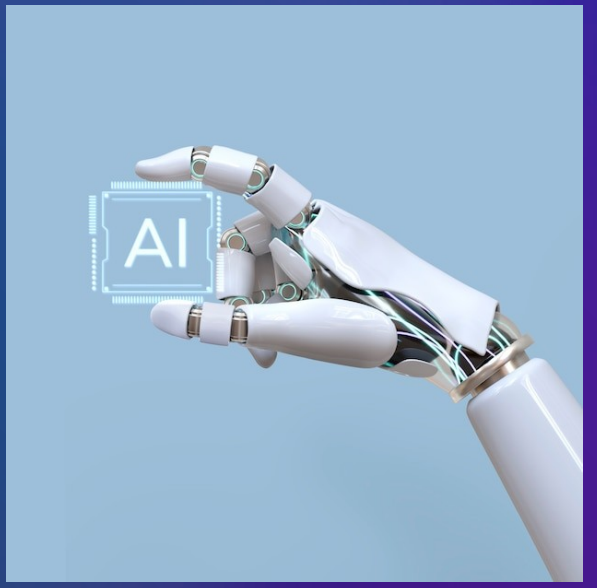


INTRODUCTION

Conversational AI leverages machine learning and natural language processing (NLP) to enable machines to understand and interact with humans in a natural manner. These systems can significantly improve the user interface and user experience across various sectors including education, healthcare, and customer service. The technology has evolved rapidly over the years, from simple rule-based systems to sophisticated models capable of understanding context and emotions. This project focuses on applying conversational AI to streamline the class registration process for engineering students, reducing time and improving accuracy.



REQUIREMENTS

1

Hardware Requirement:

16GB RAM

2GB graphic card

500GB memory

#

2

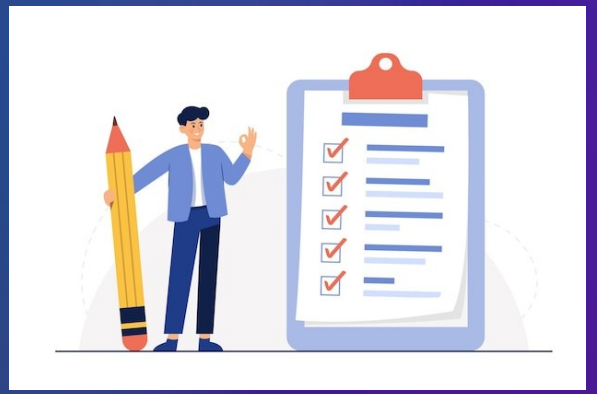
Software Requirement:

chainlit

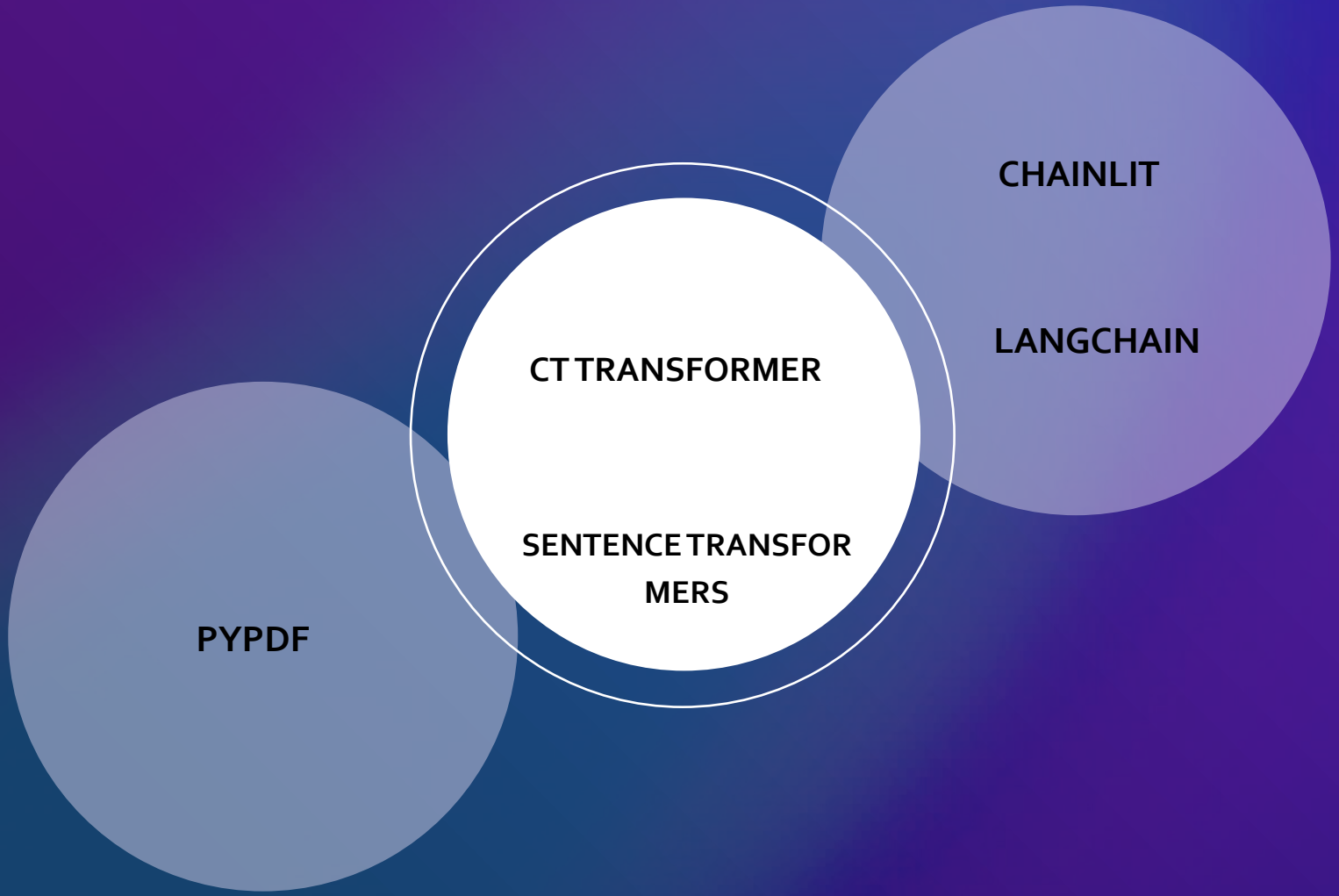
Visual studio

AGENDA

“Explore our Conversational AI Chatbot solution designed to streamline college course registration. Learn how we utilize cutting-edge technologies like sentence_transformers and chainlit, alongside advanced NLP techniques, to enhance precision and user experience. Discover the meticulous development journey and future directions for optimizing efficiency and satisfaction in class enrollment."



LIBRARIES

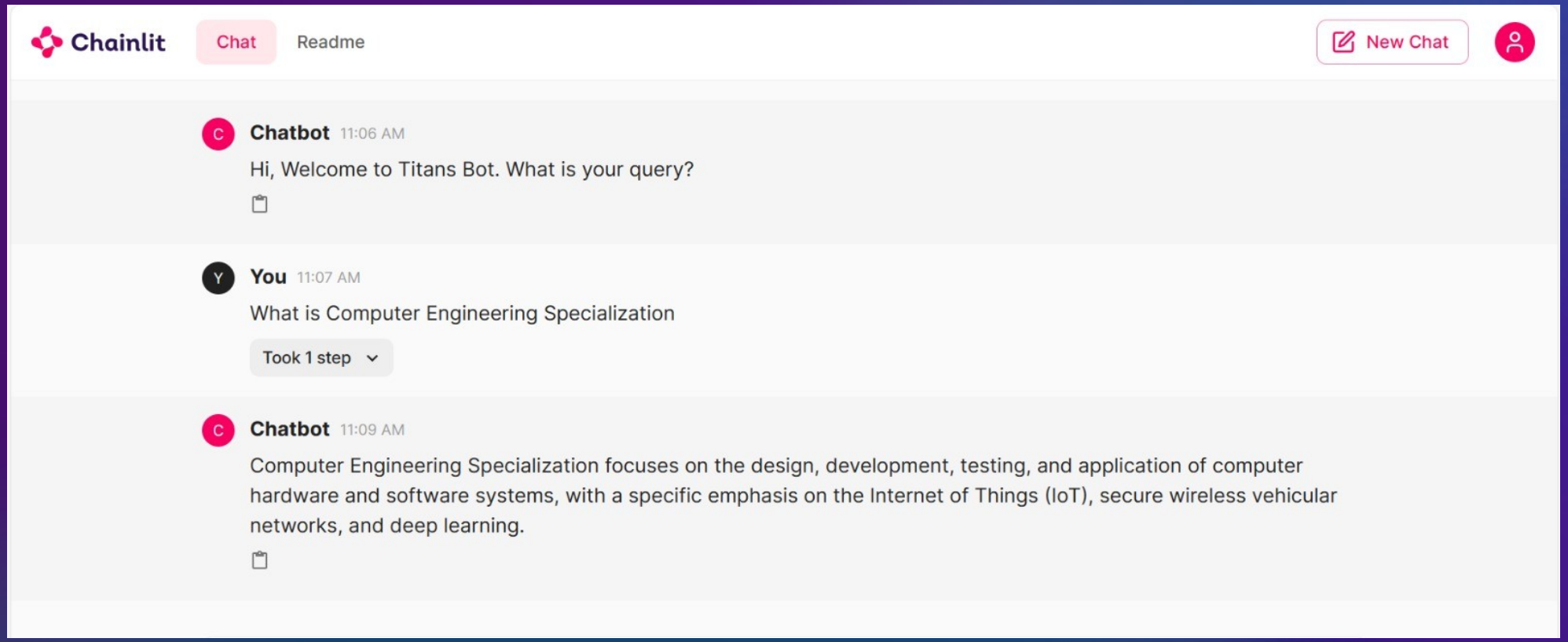

CHAINLIT
LANGCHAIN
CT TRANSFORMER
SENTENCE TRANSFOR
MERS
PYPDF

IMPLEMENTATION

```python
from langchain_community.embeddings import HuggingFaceEmbeddings
from langchain_community.vectorstores import FAISS
from langchain_community.document_loaders import PyPDFLoader
from langchain_community.document_loaders import DirectoryLoader
from langchain.text_splitter import RecursiveCharacterTextSplitter

DATA_PATH = 'data/'
DB_FAISS_PATH = 'vectorstore/db_faiss'

# Create vector database
def create_vector_db():
    loader = DirectoryLoader(DATA_PATH,
                             glob='*.pdf',
                             loader_cls=PyPDFLoader)

    documents = loader.load()
    text_splitter = RecursiveCharacterTextSplitter(chunk_size=500,
                                                   chunk_overlap=50)
    texts = text_splitter.split_documents(documents)

    embeddings = HuggingFaceEmbeddings(model_name='sentence-transformers/all-MiniLM-L6-v2',
                                       model_kwargs={'device': 'cpu'})

    db = FAISS.from_documents(texts, embeddings)
    db.save_local(DB_FAISS_PATH)
```

```python
from langchain.document_loaders import PyPDFLoader, DirectoryLoader
from langchain import PromptTemplate
from langchain.embeddings import HuggingFaceEmbeddings
from langchain.vectorstores import FAISS
from langchain.llms import CTransformers
from langchain.chains import RetrievalQA
import chainlit as cl

DB_FAISS_PATH = 'vectorstore/db_faiss'

custom_prompt_template = """Use the following pieces of information to answer the user's question.
If you don't know the answer, just say that you don't know, don't try to make up an answer.

Context: {context}
Question: {question}

Only return the helpful answer below and nothing else.
Helpful answer:
"""

def set_custom_prompt():
    """
    Prompt template for QA retrieval for each vectorstore
    """
    prompt = PromptTemplate(template=custom_prompt_template,
                            input_variables=['context', 'question'])
```

OUTCOME


Chainlit
Chat
Readme
New Chat
Chatbot 11:06 AM
Hi, Welcome to Titans Bot. What is your query?
You 11:07 AM
What is Computer Engineering Specialization
Took 1 step
Chatbot 11:09 AM
Computer Engineering Specialization focuses on the design, development, testing, and application of computer hardware and software systems, with a specific emphasis on the Internet of Things (IoT), secure wireless vehicular networks, and deep learning.

FUTURE WORK

REFERENCES

https://huggingface.co/TheBloke/Llama...

https://github.com/Chainlit/chainlit

https://python.langchain.com/docs/get_started/introduction.html

https://github.com/marella/ctransformers

QUESTIONS

TITANS BO

THANK YOU