

# Course Advisor System Using AI

## AI INTEGRATION

- **Retrieval-Augmented Generation (RAG):** Boosts LLM accuracy by supplying the model with applicable course information for more relevant answers to user queries
- **OpenAI LLM Models (GPT-3.5-turbo and GPT-4o):** Generates contextually-aware responses for users' queries
- **Phi-3-mini:** Routes queries to relevant databases using Microsoft's smaller language model, Phi-3-Mini
- **Fine-Tuning & Prompt Engineering:** Makes our model more consistent and accurate by altering prompt language and providing example responses

## OVERVIEW

Our project aims to enhance the **course advising system** at Duke by introducing a chatbot designed to provide 24/7 support to students. The chatbot employs **semantic search** to identify relevant courses, resources, and requirements to **empower students** to make the most of their Duke experience.

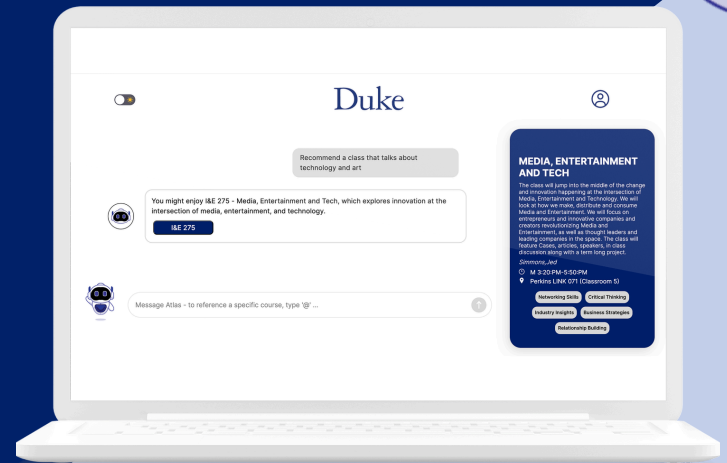


Check out our project demo here:  
<https://duke.is/atlasdemo>



## KEY FEATURES

- **AI Chatbot:** Conversational chatbot that users can interact with to ask advising questions
- **User Survey:** Optional survey to collect student information in an effort to personalize chatbot responses
- **Course Quick View/Skill Tags:** Users can view course information and skill tags directly in the chat window
- **Kubernetes Deployment:** Webapp is deployed to an accessible URL hosted on OKD and Azure



## WHAT'S NEXT?

- **Graph Database:** Migrating to a graph database would allow the chatbot to understand more complex course sequences
- **Deployment:** We hope to expand our project beyond Duke to other universities in North Carolina through NCShare

Code <+>  
Duke  
UNIVERSITY



2201525: NCShare Science DMZ  
2201105: NCShare Compute as a Service

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