

Problem Definition

Academic advising at UBCO faces significant challenges due to limited walk-in hours and long wait times, especially during peak periods like course registration and beginning of the academic year. Students often need immediate support for issues such as course recommendation, academic planning, career advice, and checking for graduate requirements, but the current resources are insufficient to meet this demand efficiently.

Related Work

Recent studies and implementations of AI chatbots in the field of education highlight their potential to enhance student interactions and automate administrative tasks. A system literature review in the *International Journal of Educational Technology in Higher Education* (2023) demonstrated AI chatbots are capable of personalizing student interactions, provide tutoring, homework aid and support concept-learning. However, challenges such as accuracy, bias and the user acceptance rate still remains.

An AI-enhanced chatbot, Pounce, implemented at the Georgia State University, significantly optimizing student engagement and reduced the summer melt by providing 24/7 support for tasks such as financial aid applications, class registration and more.

Additionally, the recent development of advanced AI like ChatGPT, as described in the *MIT Technology Review* (2023), showcases the effectiveness of using large language models (LLMs) and reinforcement learning for generating relevant and coherent responses.

These advancements underscore the potential of AI in educational settings, although integrating these tools into a cohesive, user-friendly system tailored to our university's needs remains a challenge.

Suggested Solution

To address this issue, I propose developing an AI-Powered Academic Advisor - Bolt. It aims to leverage student experience, allowing better academic planning and decision-making while also alleviating the burden on the academic advisors. By streamlining the advising process, Bolt can offer instant, accurate, and customized guidance to students whilst significantly reducing wait times and improving the overall effectiveness and efficiency of academic advising at UBCO. The development of Bolt would be by leveraging existing Generative AI (GenAI) tools. Instead of building an AI model from scratch, we will integrate and customize advanced GenAI models such as the GPT-4.0 which would be able to provide personalized academic planning as well as real-time answers to students' queries. This approach will enable us to rapidly develop and deploy a robust advising tool while minimizing development costs and time.

Research Objectives and Questions

Objective: To develop and evaluate an AI-Powered Academic Advisor that enhances the academic advising at UBCO

Research Questions:

1. What are the usability and accessibility challenges faced by students and academic advisors when using
2. How effective is the AI model in providing accurate and customized academic advice compared to traditional methods?
3. What impact does the AI model have on student satisfaction rates and their academic performance?

Methodology

- Build function call to GPT-4 API
- Collect and build dataset in JSON format
- Use OpenAI's fine-tuning API for custom training on dataset
- Create website and design frontend UI
- Evaluate the effectiveness of the AI-Powered Academic Advisor by testing the tool with real audience and analyze the feedback collected

Timeline

Date & Deadline	Tasks	Notes
25th September	Data Collection + Research	Finalize dataset
10th October	Data Cleaning + Preprocessing	Finalize Tech Stack
20th October	Data Analysis	Integrate GPT-4 for NLP
30th October	Model Trials	Build frontend
10th November	Model Application	Work on backend
25th November	Testing	User Acceptance Testing
6th December	Documentation	Deploy (if needed)