Generative AI Applied to Student Guide

PROBLEM

The current **Science is Tough: But So Are You** student guide **fails to engage students** due to its **lengthy** and **static** nature. Resulting in students who are **inadequately equipped for university cultures and demands**

OBJECTIVES

- Improve student engagement through the use of **Generative-AI**
- Provide a **highly usable** and **responsive** learning environment
- Support **immersion** and **creativity** through personalization
- Ensure **cohesion** and **relevancy** through moderation frameworks

3 SOLUTIONS

AI-Hosted Lectures
Summarizes main points

Interactive Chatbot
Answers any further questions

Personalized Podcasts
Consolidates learning

AI-HOSTED LECTURES
BY NOVA ADAMS-DUMA

INTERACTIVE CHATBOT
BY DAANYAAL BALLIM

PERSONALIZED PODCASTS
BY ANGELO YANG

RESEARCH AREAS

To what degree do first-year science students perceive the AI-powered chatbot, personalized podcasts and lecture videos as more engaging than the static student guide?

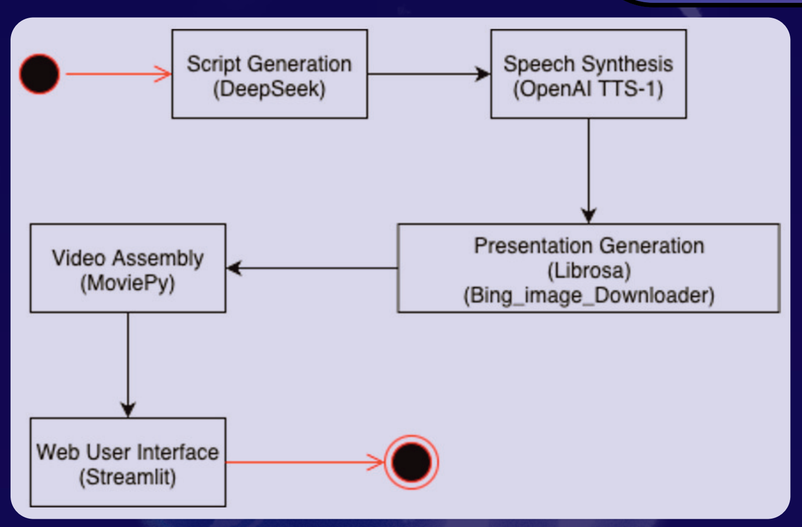
FEATURES

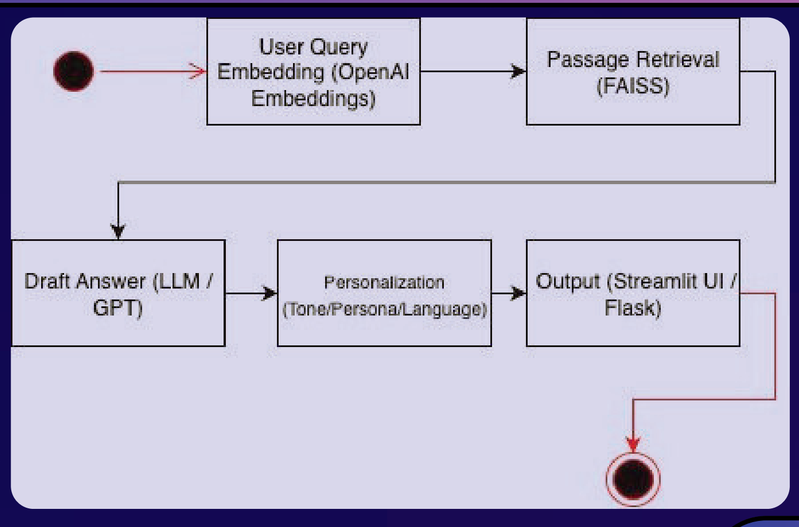
- **Consistently minimalist** slides with content-aware image selection
- Descriptive narrative lecturer voices
- Transitionary **lecturer expressions** between presentation slides

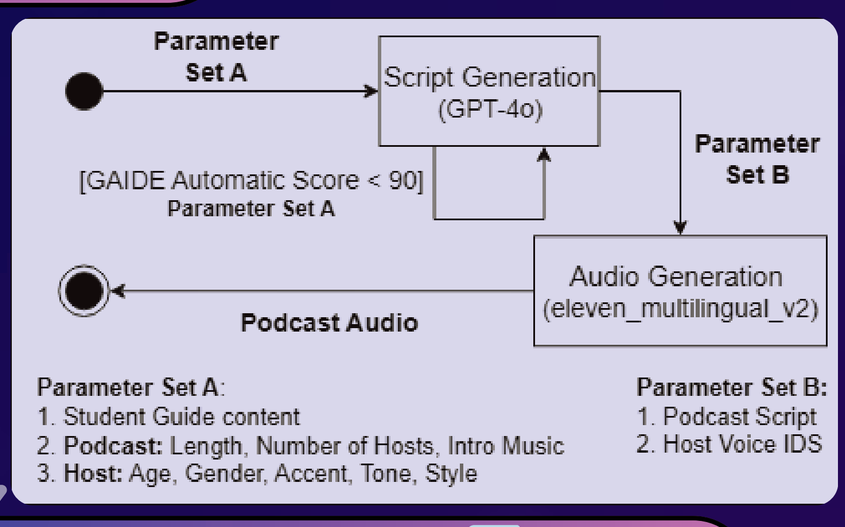
- Conversational Q&A with study guide content
- **Customizable** tone, persona, explanation style, and language
- **Lightweight, scalable** system for resource-limited contexts

- AI Host creation with **90 available voices**
- Automatic moderation (GAIDE Automatic)
- Seamless student access to premade podcasts that are **fully moderated**
- Optimized & responsive Generative-AI pipeline

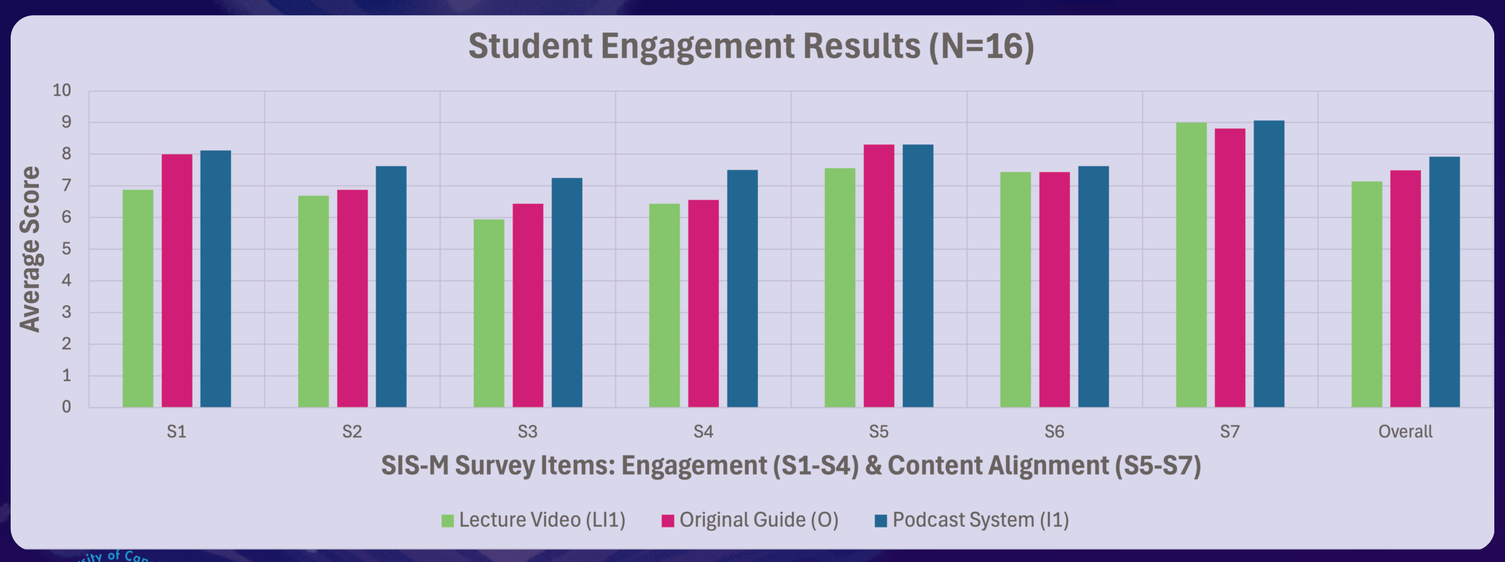
IMPLEMENTATION







RESULTS



- Personalized podcasts **improved student engagement (+0.66)** and **content quality (+0.14)**, while staying aligned with the original guide.
- The AI-Hosted Lecture Videos achieved the **highest utility score** and **matched excitement levels**, proving its unique value.
- The AI Chatbot also significantly **improved engagement and understanding**, with **97%** of students preferring it over static PDF guides.

University of Cape Town
Department of Computer Science
TEL: +27 (0)21 650 2663
Website: https://sit.uct.ac.za/

Authors:
Angelo Yang: YNGANG003@myuct.ac.za
Nova Adams-Duma: ADMNOV001@myuct.ac.za
Daanyaal Ballim: BLLDAA001@myuct.ac.za

Supervisors:
Gary Stewart: gstewart@cs.uct.ac.za