

SPACE QA BOT - MAKING THE UNIVERSE ACCESSIBLE FOR YOUNG LEARNERS

The problem statement

LONG VIDS
• NO Q&A

FRUSTRATION

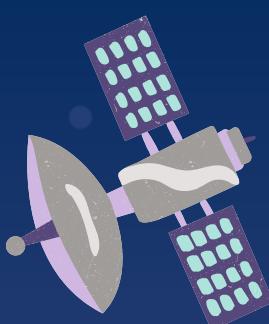


A boy with brown hair and freckles is sitting at a desk, looking at a tablet screen. The screen displays a space-themed image of a rocket launching from a planet. The boy has a thoughtful expression, with his hand resting against his chin. To the right of the tablet is a large speech bubble containing text and a robot icon.

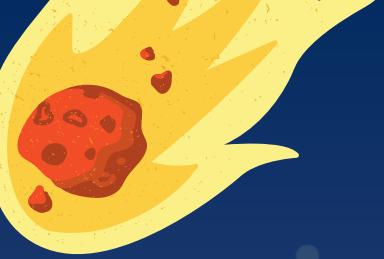
Why don't planets crash into the sun?

Planets are very far away from the sun and are moving around it. This balance of distance and movement keeps them in orbit.

LEARNING GAP



Why It Matters

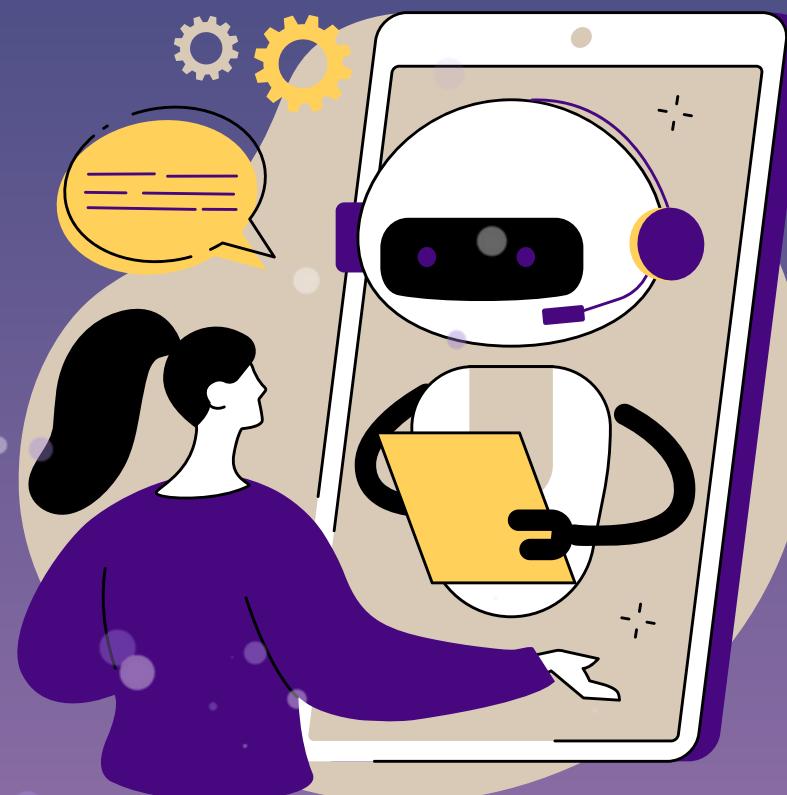


UNFORTUNATELY, NO EXISTING SYSTEM ADAPTS ITS ANSWER FOR A 7-YEAR-OLD VS. A 17-YEAR-OLD.



Our Solution - Special Features:

BUILDING A SPACE QA
CHATBOT



SPACE-RELATED
CONTENT ONLY!

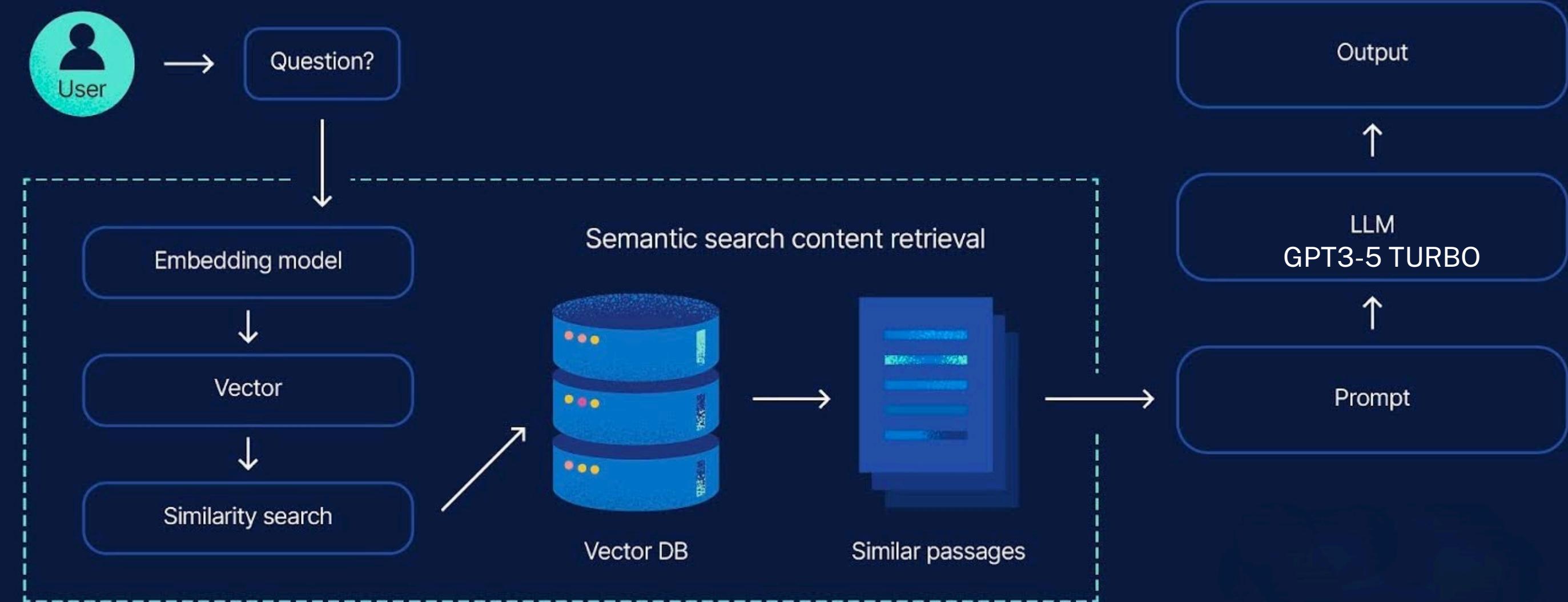


AUDIENCE TARGET

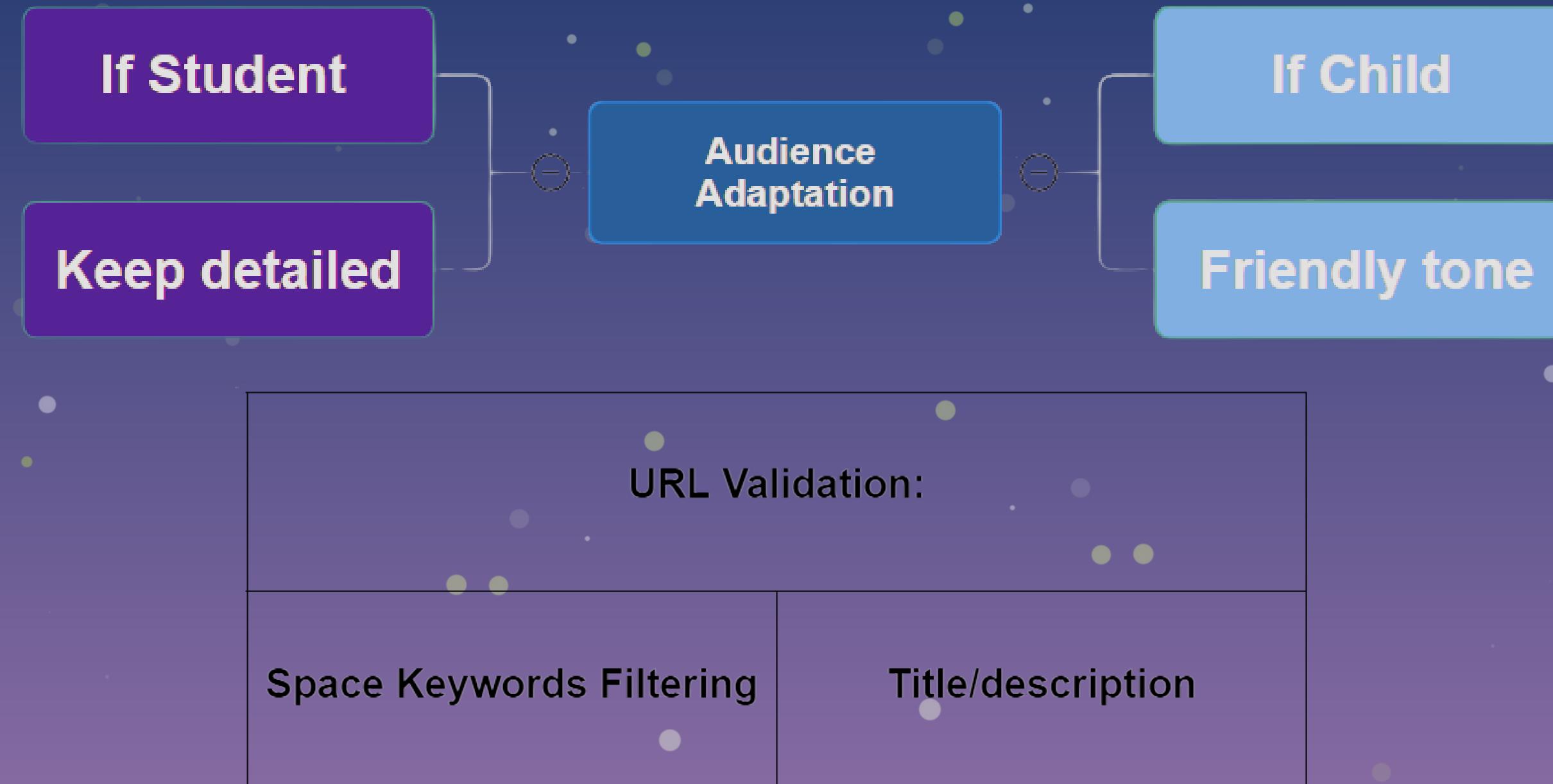


How It Works - System Pipeline:

Retrieval augmented
generation (RAG) in action



Under the Hood - system's internal architecture:



= PROMPT ENGINEERING

Evaluation & Performance (via LangSmith)

The screenshot shows the LangSmith interface for monitoring a pipeline named "my_pipeline". The top navigation bar includes "Personal", "Tracing Projects", and "my_pipeline". On the right, there are buttons for "Add resource", "ID", "Data Retention (14d)", and "Add Rule". Below the navigation, there are tabs for "Runs", "Threads", "Monitor", "Alerts", "New", and "Setup", with "Runs" being the active tab. A filter section allows selecting "1 filter", "Last 7 days", "Root Runs", "LLM Calls", or "All Runs", with "All Runs" currently selected. A "Columns" button is also present. The main area displays a table of pipeline runs:

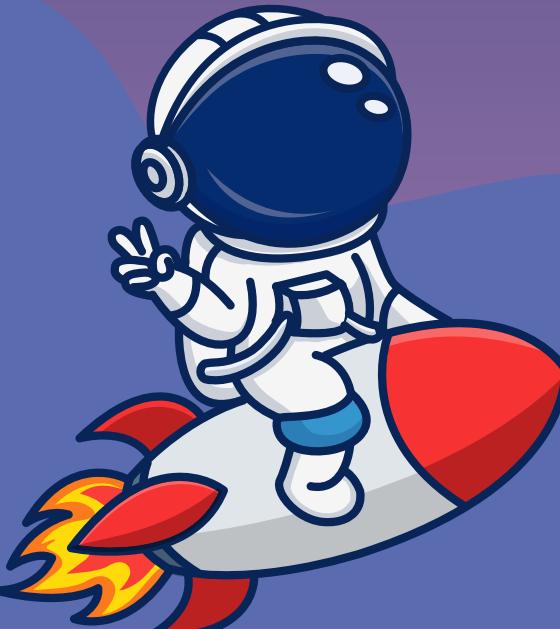
Name	Input	Output	Error	Start Time	Latency	Dataset	Annotation Queue	Tokens	Cost
RetrievalQA	how far is hr moon fro...	I don't know the e...		5/6/2025, 4:59:56 ...	⌚ 3.52s	∅	∅	127	\$0.0001305
RetrievalQA	How China REINVENT...	I'm sorry, I don't ...		5/6/2025, 4:59:29 ...	⌚ 4.03s	∅	∅	72	\$0.000047
RetrievalQA	How China REINVENT...	I'm sorry, I don't ...		5/6/2025, 4:59:12 AM	⌚ 1.85s	∅	∅	72	\$0.000047
RetrievalQA	how does the rocket e...	Rocket engines w...		5/6/2025, 4:58:51 AM	⌚ 3.37s	∅	∅	143	\$0.0001555
RetrievalQA	how does the rocket e...	Rocket engines w...		5/6/2025, 4:58:27 ...	⌚ 2.86s	∅	∅	153	\$0.0001705

Future Work & Enhancement:

- Deploy as a web app for public use
- Automated Keyword Expansion (e.g., Artemis missions, James Webb Telescope)
- Multi-Language Support Chatbot



Mobile App



Into Deployment – Meet Space QA Bot

