
MIDS Applicant Advisor Chatbot - an Exercise in NLP and Conversational AI

Final Presentation

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MIDS Applicants Struggle to Find...



Relevant information

"When I searched for the answer online, I could only find some outdated Quora posts on the matter with less-than-helpful information."

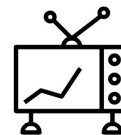
- Haerang Lee, MIDS Student



A student voice

"There doesn't seem to be enough comprehensive student reviews online. What is it actually like?"

- Wei Wang, MIDS Alumni



Preferred channels

*"Many applicants **don't want to talk to a person on the phone or by email** and want to do research on their own."*

- Jacylyn Andrews, 2U

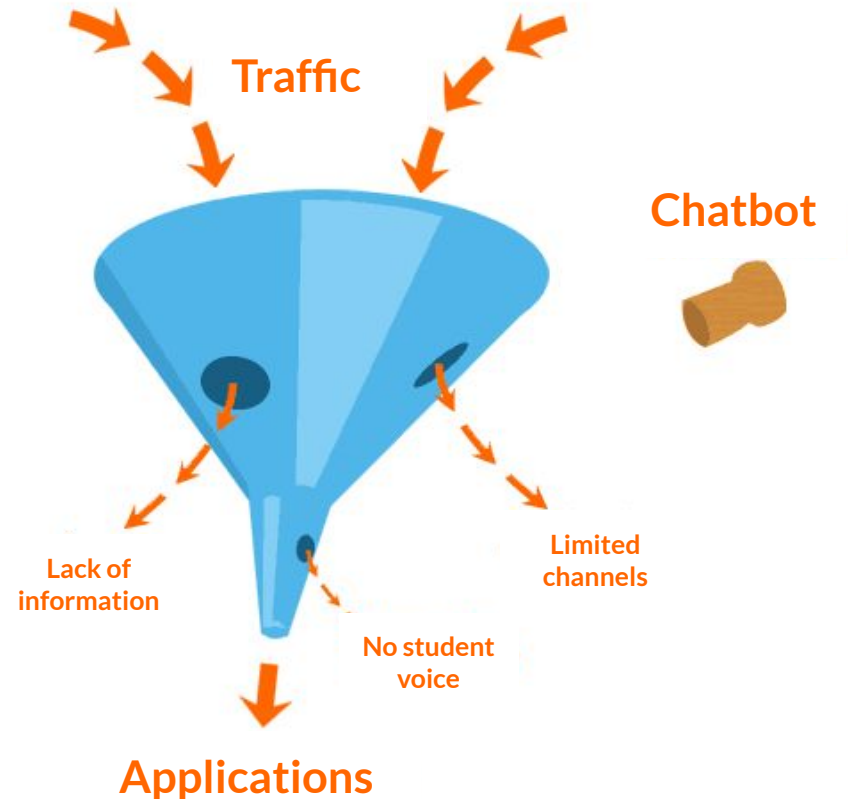
Product Vision

We are applying natural language processing powered by Amazon Lex to offer **applicants easier access to previously hard to gather data** to make informed decisions on the MIDS application.

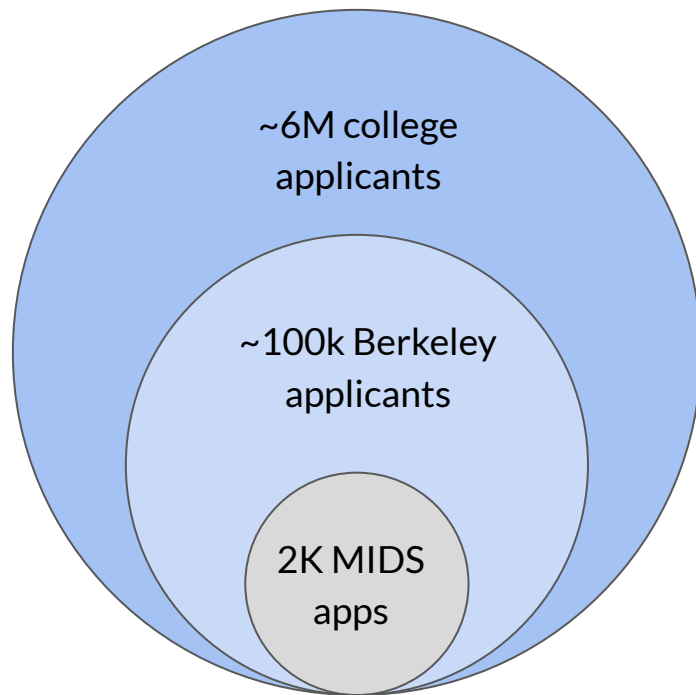


Value Proposition for Universities

We will increase **website conversion** so that more potential applicants will apply to the program.



Market Opportunity



Demo

Why Amazon Lex?

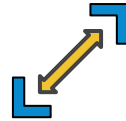
Amazon Lex - AI as a Service for building conversational interfaces into any application using voice and text.



Cost-Effective



Short Time to
Market



Scales
Automatically



Leverages Alexa
NLP to Create
Speech Language
Understanding
System

How Lex Supports Conversations

Understanding the Intent (User's Question)

- ❑ Utterance
- ❑ Slots
- ❑ Input Validation (Lambda)
- ❑ Session Attributes
- ❑ Input/Output Context



Fulfilling the Intent (Providing Answer)

- ❑ Message
- ❑ Response Card
- ❑ Intent Chaining
- ❑ Code Hook (Lambda)



Creating a Better Chatbot Experience

Limitations

Solutions

Inflexible model

- Increased utterance fine-tuning
- Word / sentence variation

Rule-based framework

- Most common questions
- Increased question breadth

Less conversational

- Multi-turn design
- Intent chaining with context

What's Needed: Conversational Models



AI as a Service

PROS

- Speed
- Focus on content

CONS

- Inflexible model
- Rule-based
- Less conversational

Pretrained custom NLP
chatbot and fine-tuned
with additional domain
specific knowledge

Custom NLP Chatbot

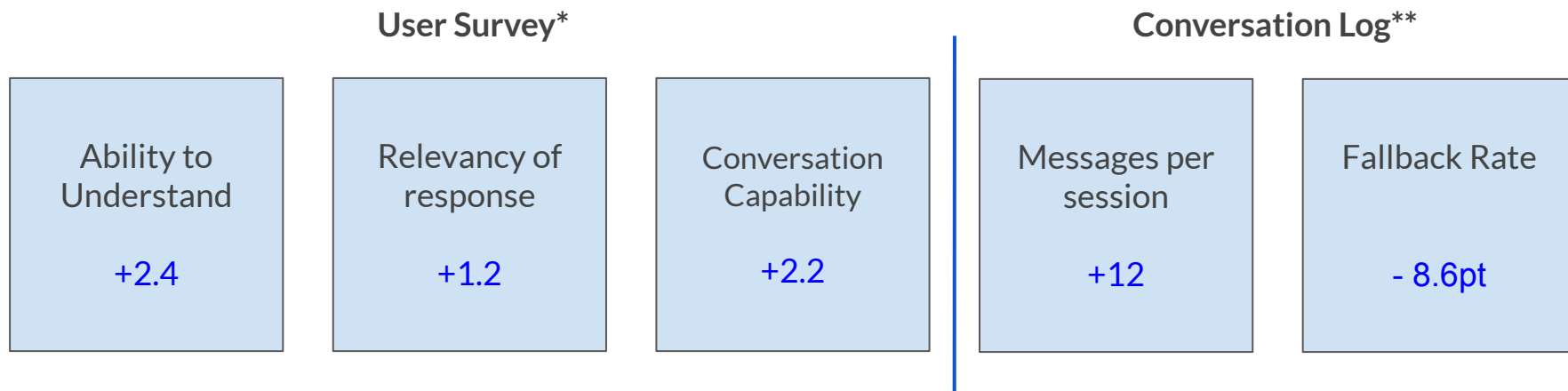
PROS

- Model selection

CONS

- Computationally intensive
- Long development time

Evaluation



Response Review

- **False Negative:** Bot misses to respond, but user input is not valid or out of knowledge base scope
- **False Positive:** Bot returns a response to user input but the response is not relevant to the input

Next Steps

Partner with
Admissions Dept
(content
development)

Integration with
University
systems and
applications

Automate
content
management

Integrate
fine-tuned NLP
model for added
flexibility

Improve **User**
feedback loop &
performance
evaluation

Thank You