



# Chat-With-A-Bot

Jin Pyo Jeon | Advisor: Professor Chris Armen  
Department of Computer Science at Trinity College

## Project and Motivations

The project implements a chatbot that you can communicate over the phone.

The bot:

- Can communicate with multiple people at the same time
- Responds in a mostly coherent manner
- Able to generate spontaneous output

The project was undertaken to explore the recent advances in two technologies: natural language processing and text-to-speech generation.

## Technology Used

Programmable Phone



NLP



Bot Server

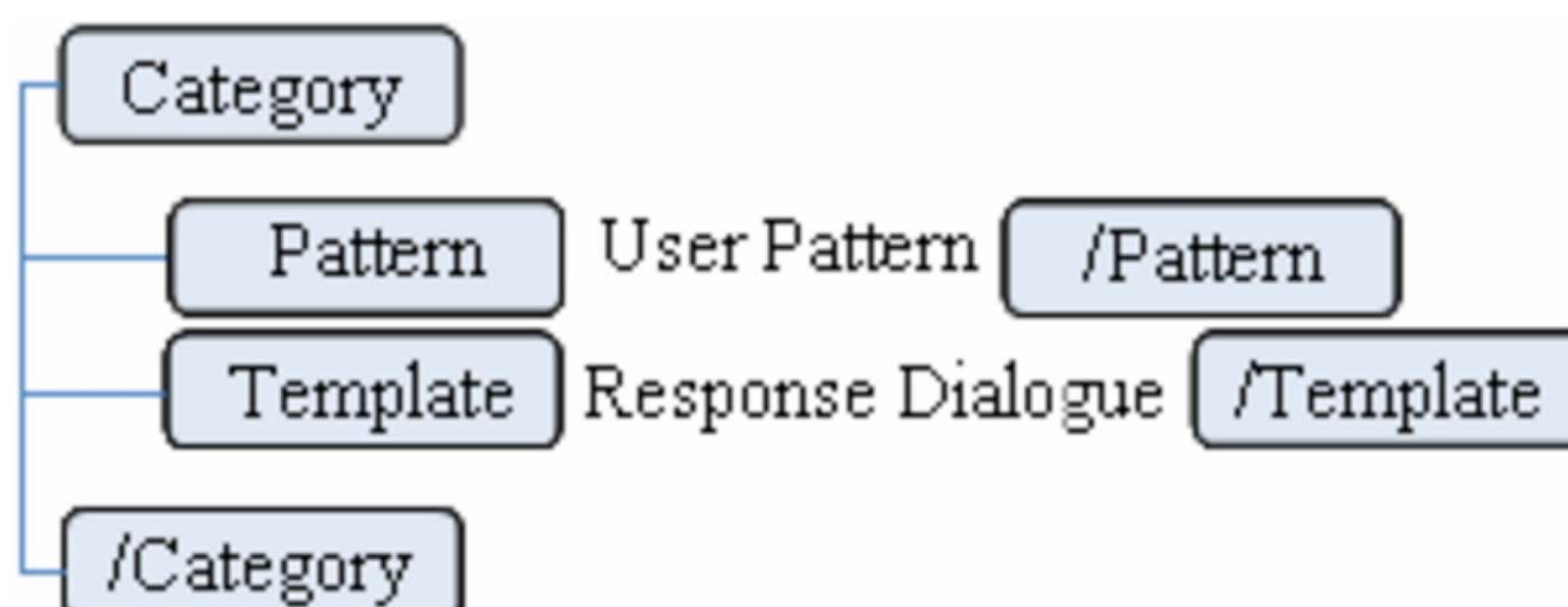


Flask



Natural Language Analyses with NLTK

AIML



## AIML

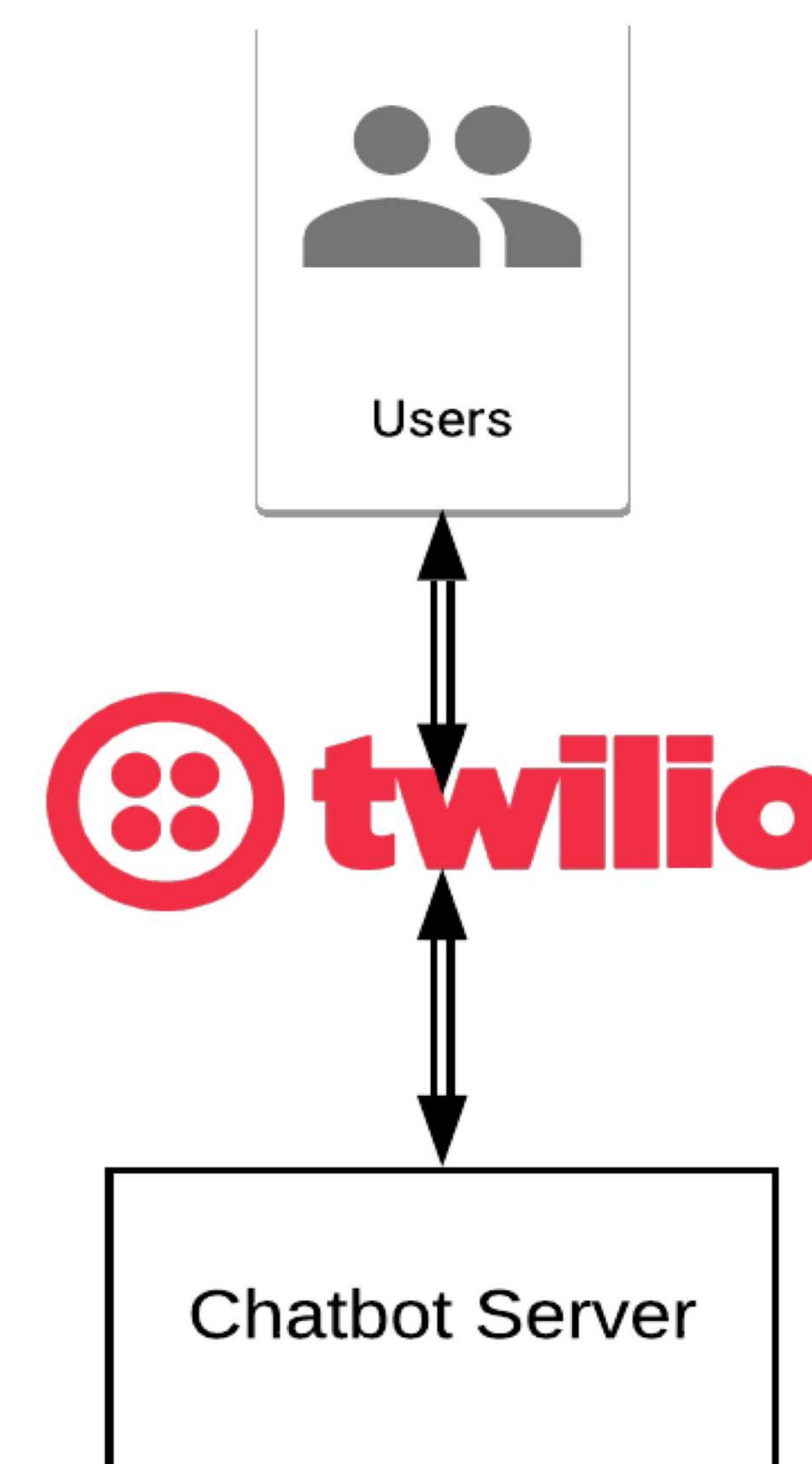
Artificial Intelligence Markup Language

- Language format, as well as an interpreter
- Allows for a rule-based (i.e. pattern matching) for natural language generation

## Implementation

Components of the workflow

1. The user calls a number
2. Twilio facilitates the communication between chatbot server and user via speech-to-text transcription and text-to-speech generation.
3. Chatbot server takes the transcription and generates sentences using AIML and NLP.



## NLP (Natural Language Processing)

A subfield of computer science that aims to develop methods for computer analysis of human language. NLP techniques include:

- Grammatical parsing
- Sentiment Analysis
- Speech-to-text & text-to-speech

## Conclusion

The project explored the limitations and advances of current technology.

- Advances
  - Improved accuracy of speech-to-text and text-to-speech
- Limitations
  - Speed
  - Primarily pattern-based language generation frequently err

## Acknowledgement

I would like to acknowledge and thank my advisor Professor Chris Armen for his guidance over the year.