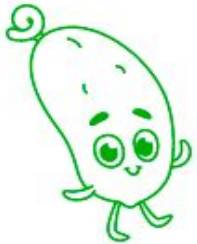
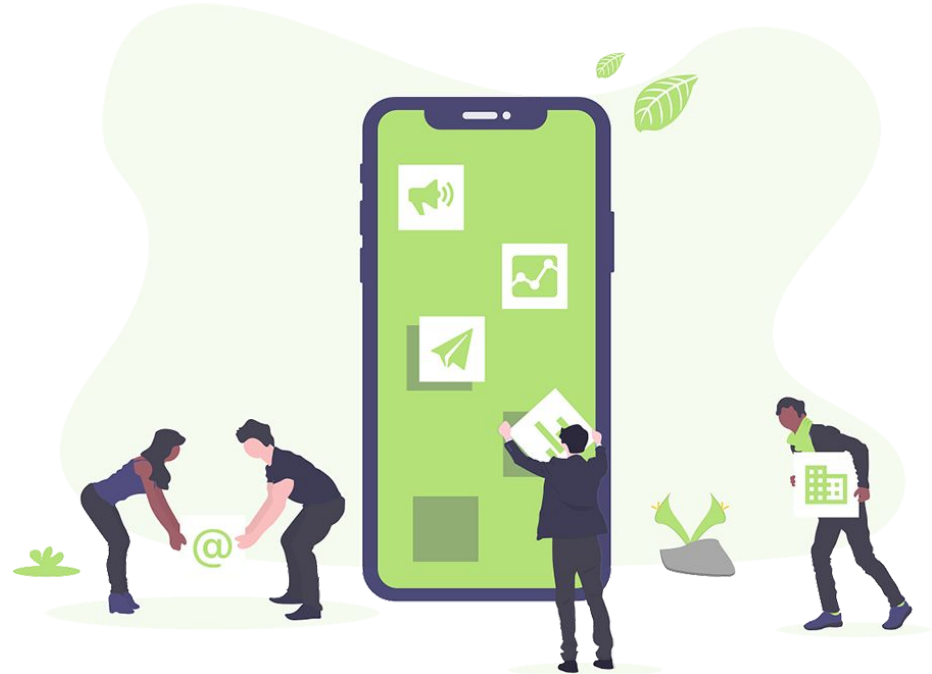


Chatbot Presentation

Software Engineering 2021

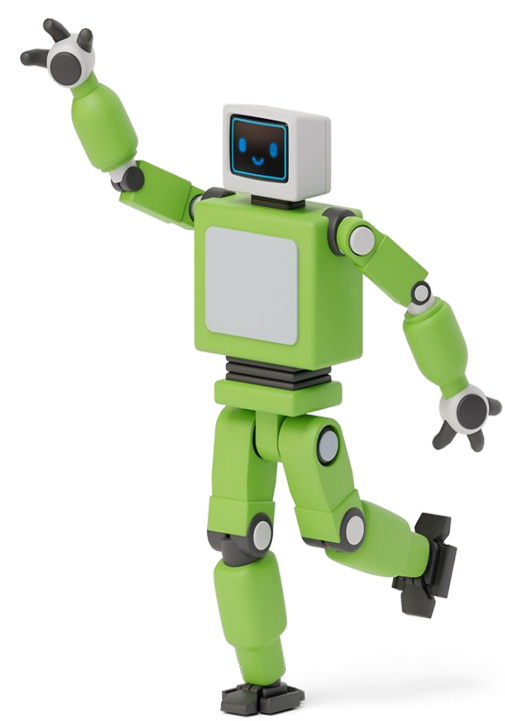


HAPPY CUCUMBERS
AI SOLUTIONS THAT ARE COOL AS CUCUMBERS



“What if your housing
experience was interactive,
seamless and
human-friendly?”





Presenting to you:

'The Real-Estate Chatbot'





Tedious



Frustrating



Tiring



Too many websites

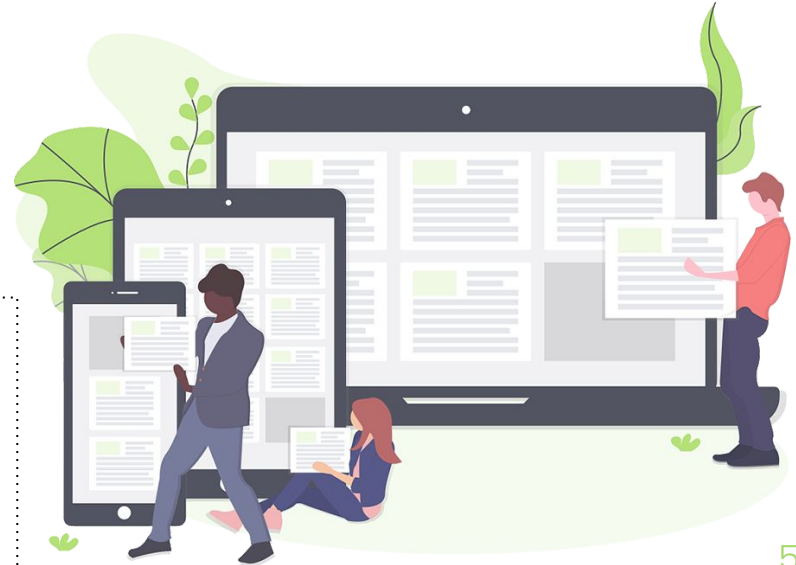
**The real estate
search today**

What is a chatbot?

Software application used to conduct an online chat conversation via text or text-to-speech.

Often facilitates human-computer interaction by making it more natural

Supposed to replace humans in important customer services, human technical support, and FAQ sections that are required for companies to deal with customer issues.



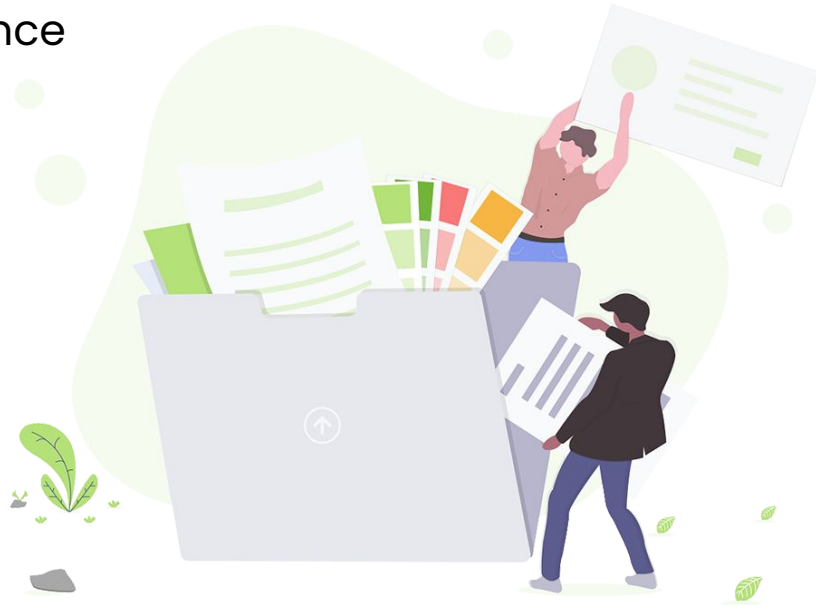
Mission & Vision

Mission

To support individuals and companies when searching for real estate with cutting edge AI solutions.

Vision

To create an interactive and simple experience when searching for housing.



Why should YOU use our Chatbot?



Convenient



Simplistic



Informative

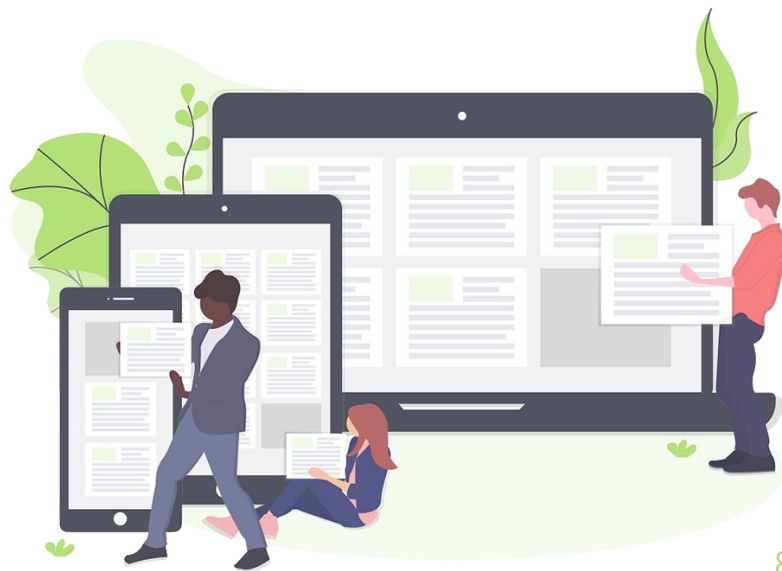


Helpful



Hardware

- Nvidia Quadro P5000 for AI model training
- AWS EC2 t3.large for orchestration
- AWS EC2 t3.xlarge for AI inference



Data

- Customer Support from Twitter
- Ubuntu Dialogue Corpus

Data cleaning:

- Removing usernames
- Extending abbreviations
- Removing emojis

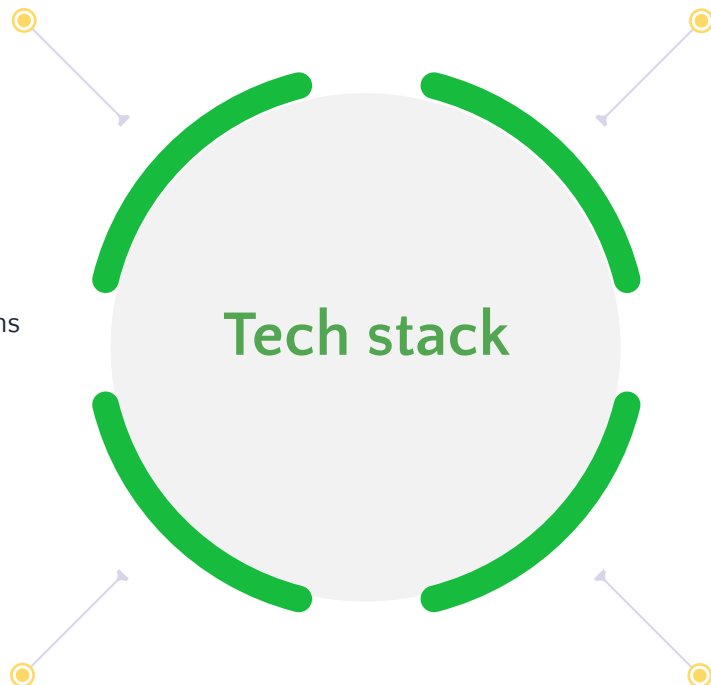


Rasa 2

- Handles the conversation
- Able to leverage natural language generation and understanding
- Encompasses a custom text-generative model to handle unexpected user input
- Detects the user's intent
- Able to handle wrong conversation paths

AWS

- Simplifies scaling and growth of the infrastructure
- Provides custom distributed architecture solutions



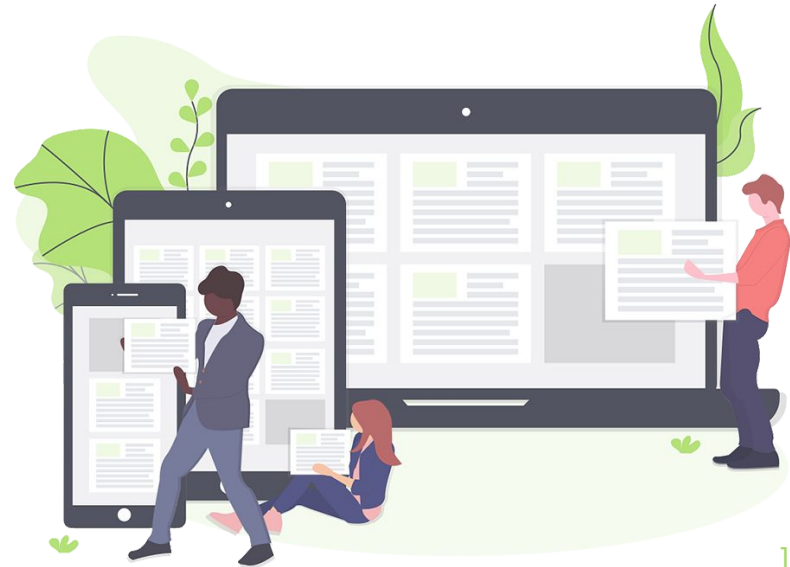
HuggingFace Transformers

- Gives the ability to easily train transformer-based neural networks
- Finetuning of a DialoGPT network, a subtype of OpenAI's GPT2
- Able to generate custom output
- Highly extends chatbot's conversational abilities

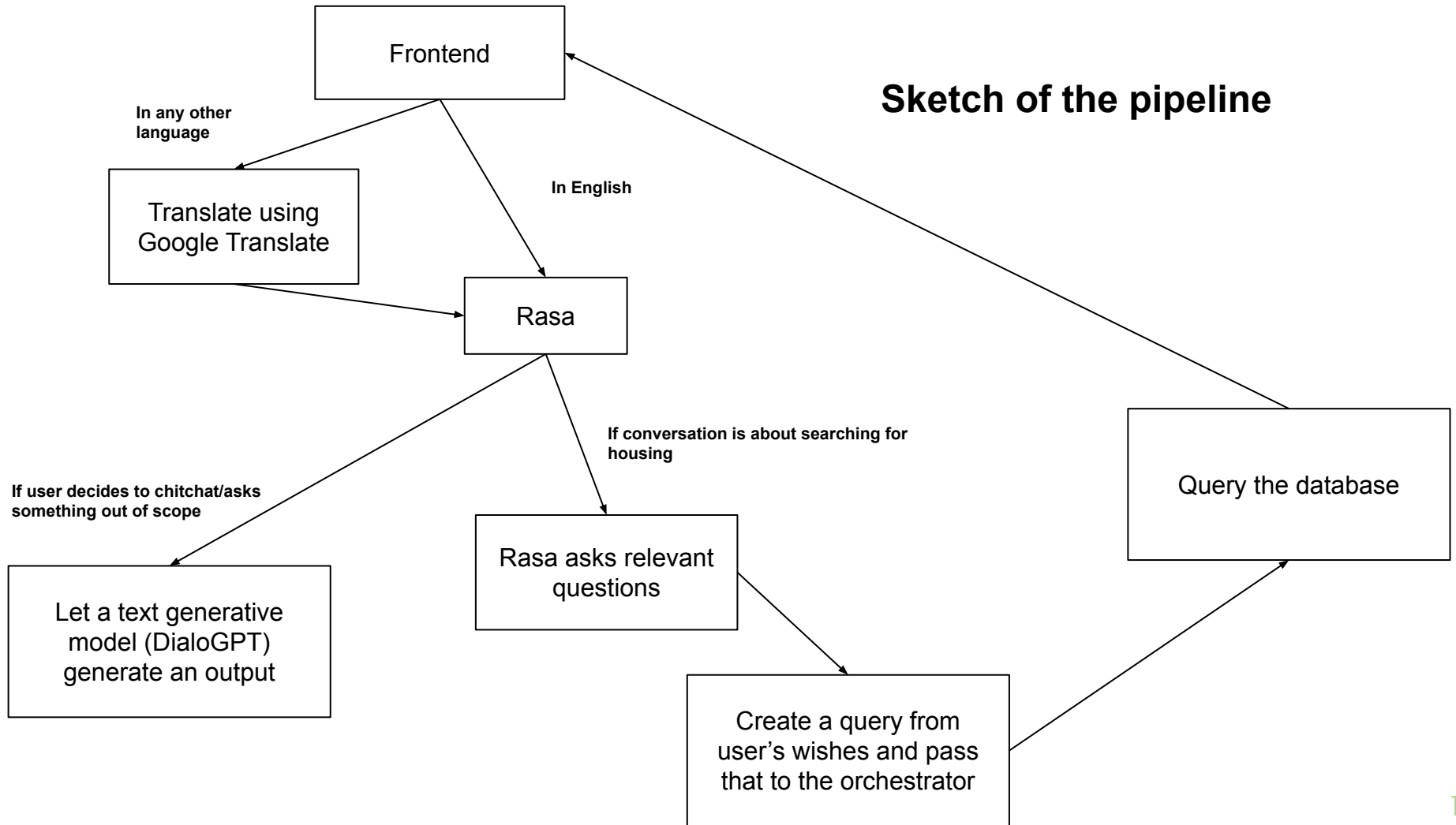
FastAPI

- Operates as an orchestrator
- Seamlessly handles the connection between Rasa through Socket.io and to the client using WebSockets
- Uses Google Translate to handle translation between languages

- CircleCI
- GitHub
- Trello
- Pytest
- PyTorch
- Docker
- SQLite



Sketch of the pipeline



Features:

- 1 Utilizes real-world data
- 2 A new user-friendly approach to an old problem
- 3 Possibilities of extension



Chatbot Demo

Available [here](#)



Constraints

- Implementing the Rasa Server created more complications and more time consuming issues
- We could not use the best technologies because of compatibility constraints

UI improvements

- Limited time and our poor knowledge on front end development made our UI look raw, improvements would provide a better user experience



Response limitations

- Because of limitations due to the relatively small dimension of the datasets
- Difficulty in using more messages for context referencing.
- Quality of responses depends on the data quality
- Slower if language is not English

Thank you

Do you have any questions?

