

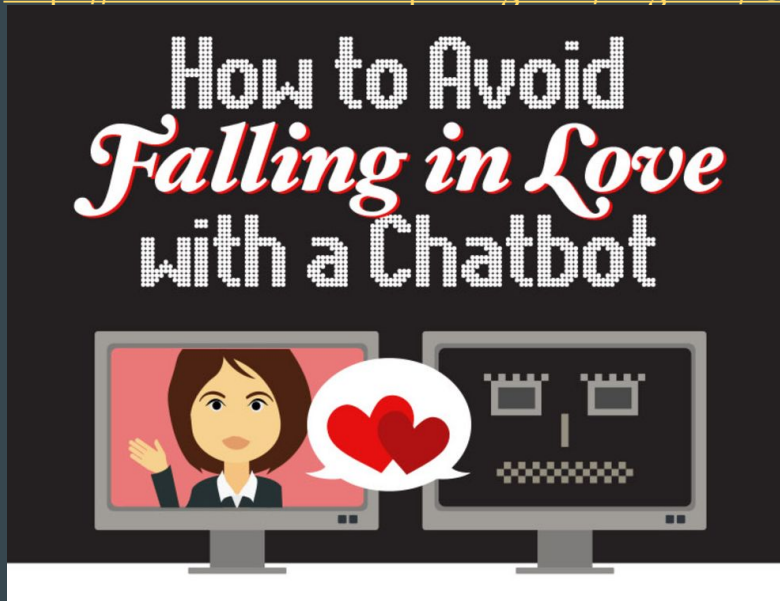
ChatBots pt. 1

...

Assim que começa...

História dos Chatbots

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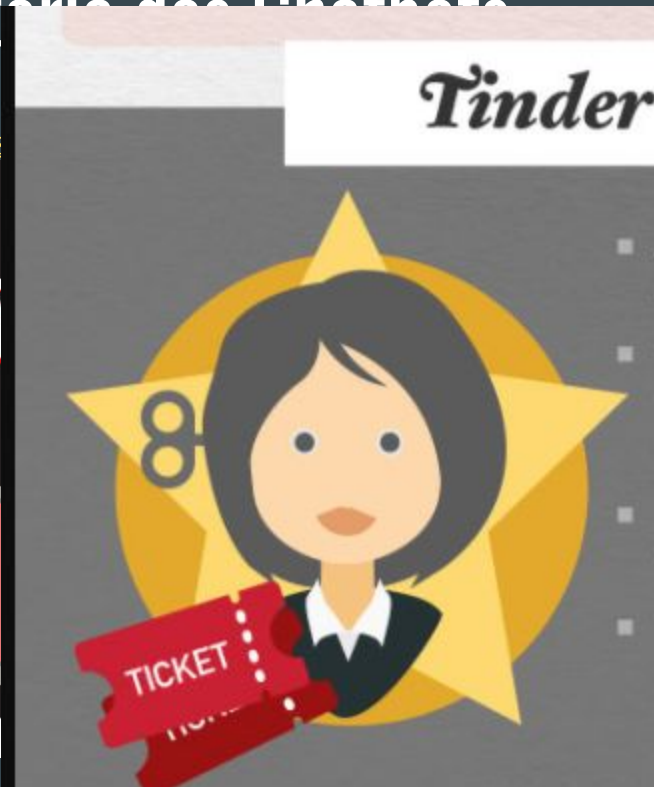
Tinder Meets Ava



- As part of a viral marketing campaign for the movie, *Ex Machina*, they created a fake Tinder account, Ava:
- They used a photo of the star of the movie to create a cross between ELIZA and the artificial intelligence (AI) character in the movie
- Ava sent her suitors to an Instagram page where they discovered she was a fake
- The profile has since been removed; however some people who matched with Ava won prizes like tickets to the premier of the movie

History of Chatbots

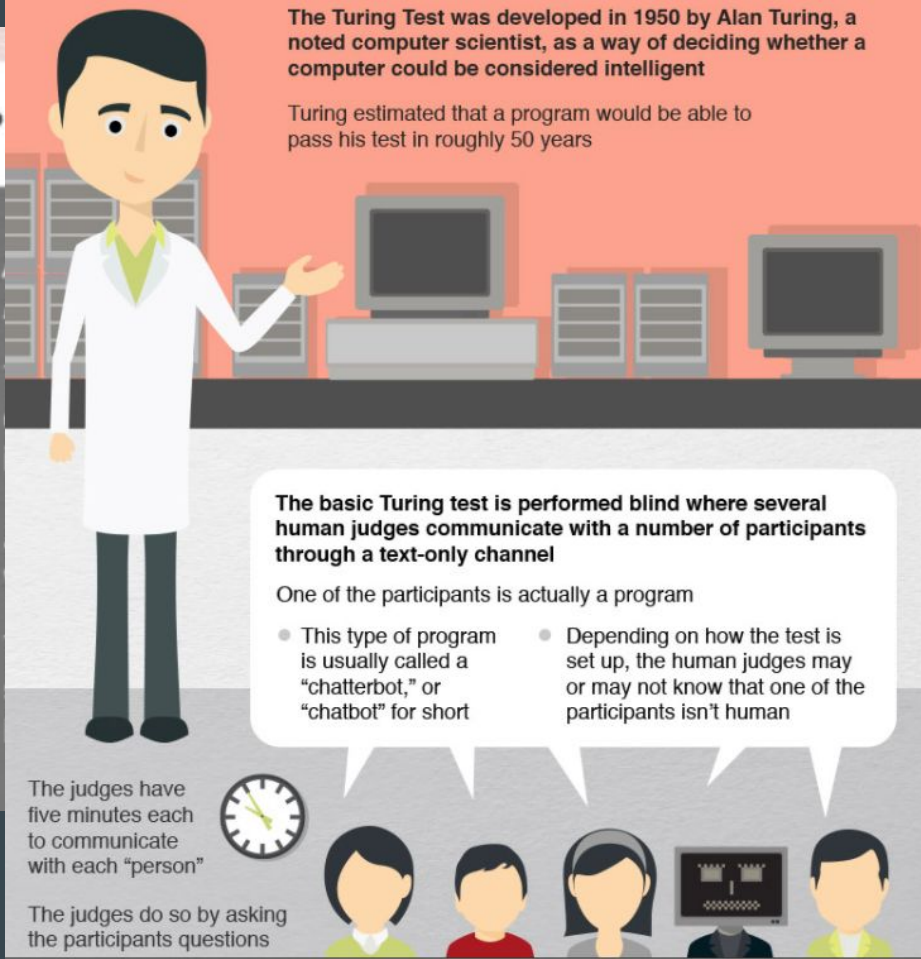
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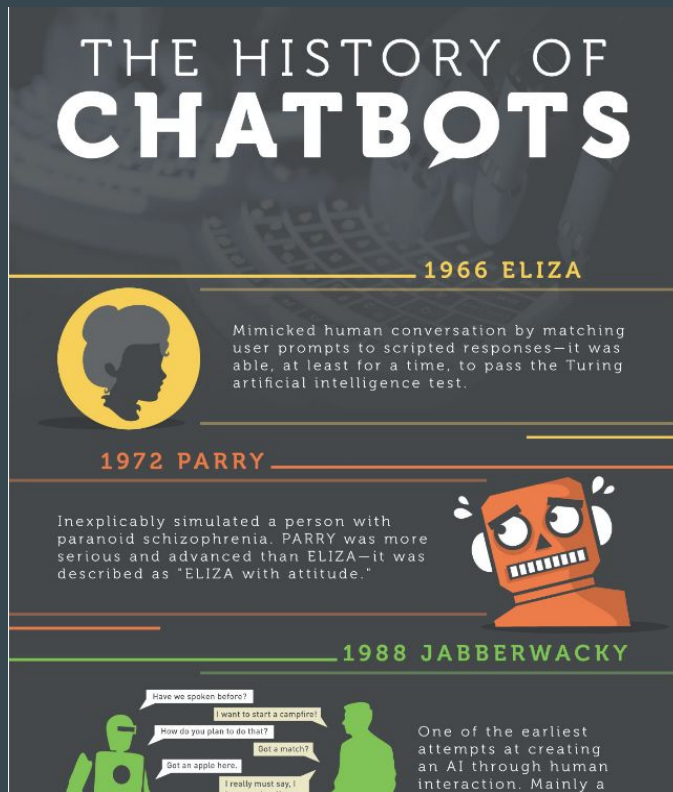
THE TURING TEST & BEYOND

The Turing Test was developed in 1950 by Alan Turing, a noted computer scientist, as a way of deciding whether a computer could be considered intelligent

Turing estimated that a program would be able to pass his test in roughly 50 years



História dos Chatbots



História dos Chatbots

THE CH



1972 PARO

Inexplicably simul-
paranoid schizoph-
serious and advan-
described as "ELIZ



1992 DR. SBAITSO

An AI speech synthesis program created for MS DOS-based PCs. Designed to showcase a digitized voice, the Doc was far from lifelike—despite assuming the role of a psychologist when interacting with users.



1995 A.L.I.C.E.



"Artificial Linguistic Internet Computer Entity," A.L.I.C.E. was a natural language processing bot. She could apply heuristic pattern matching rules to human input—in other words, have a conversation.

2001 SMARTERCHILD

An intelligent bot widely distributed across SMS networks. With features such as quick data access and fun personalized conversation, it was considered a precursor to Apple's Siri and Samsung's S Voice.

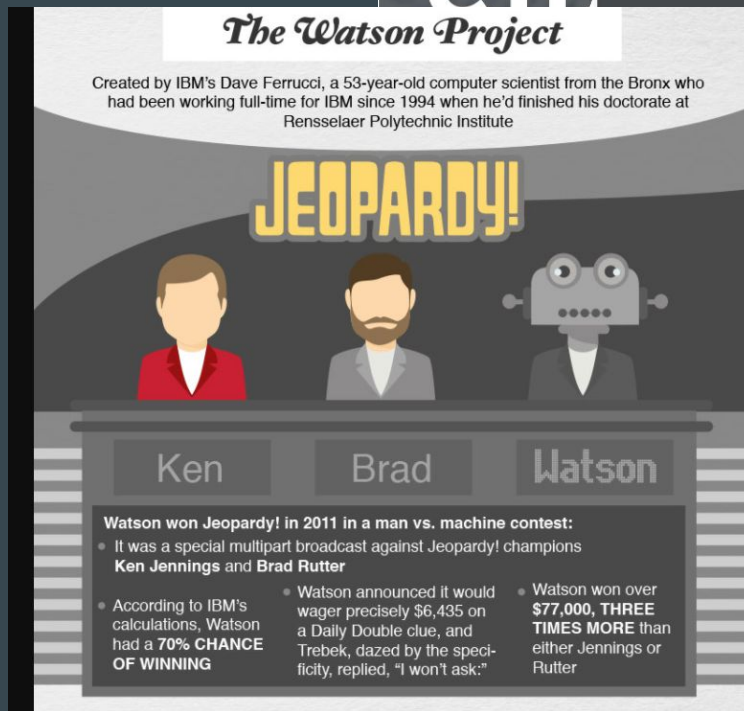


2006 IBM'S WATSON



Watson was specifically designed to compete in Jeopardy!, which he won in 2011 against two of the show's former champions. Now Watson uses natural language processing and machine learning to reveal insights from large amounts of data.

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MARTERCHILD

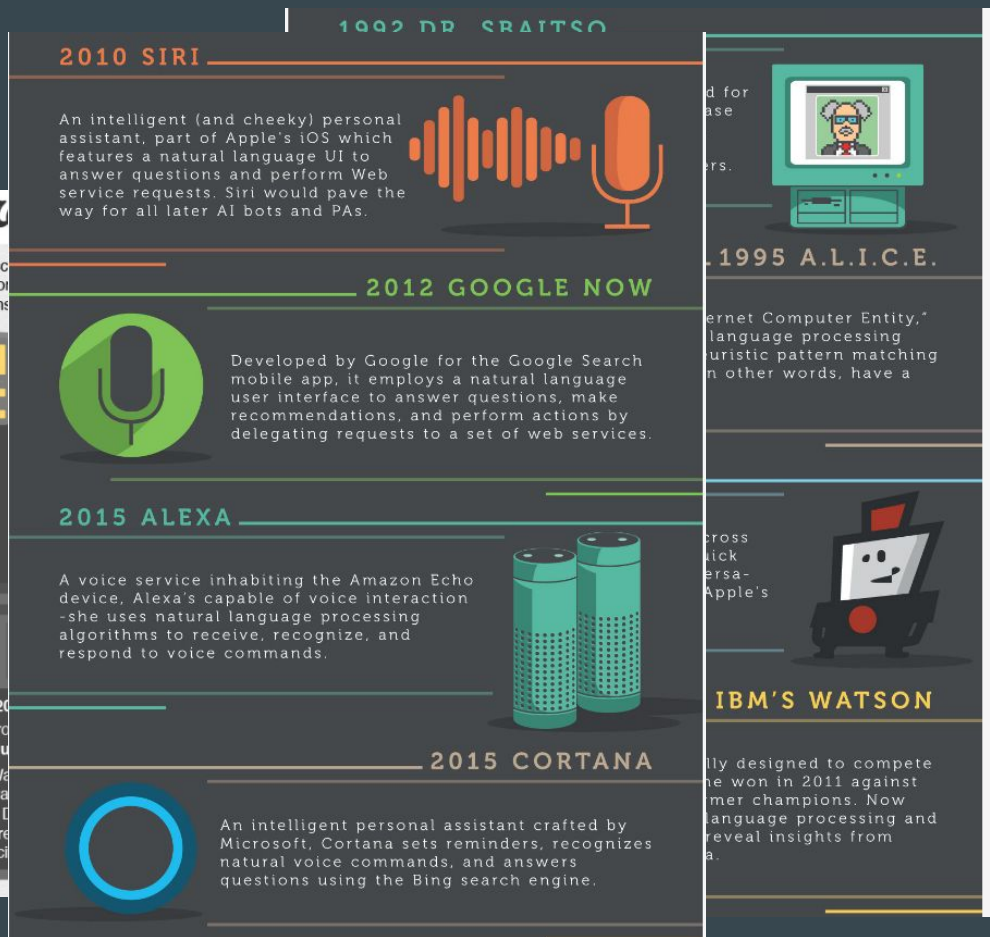
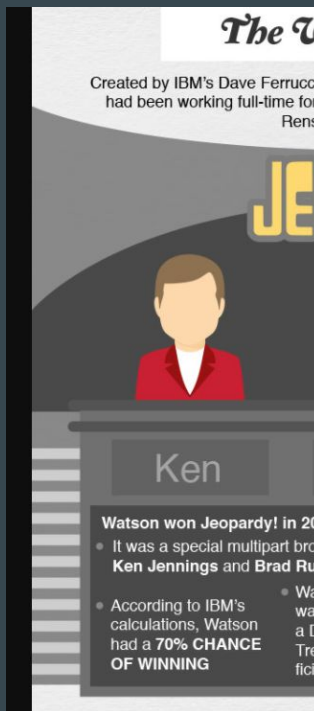
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História dos Chatbots



Missão: Construir um
classificador de texto - que
vamos chamar de chatbot -
em uma sessão de Hangout

Mas, Primeiro....

Vamos definir algumas coisas...

O objetivo é mostrar que o maior trabalho pode não estar no “Cérebro” do ChatBot...

Um modelo de Chatbot

Interface com o Usuário

Um modelo de Chatbot

Interface com o Usuário

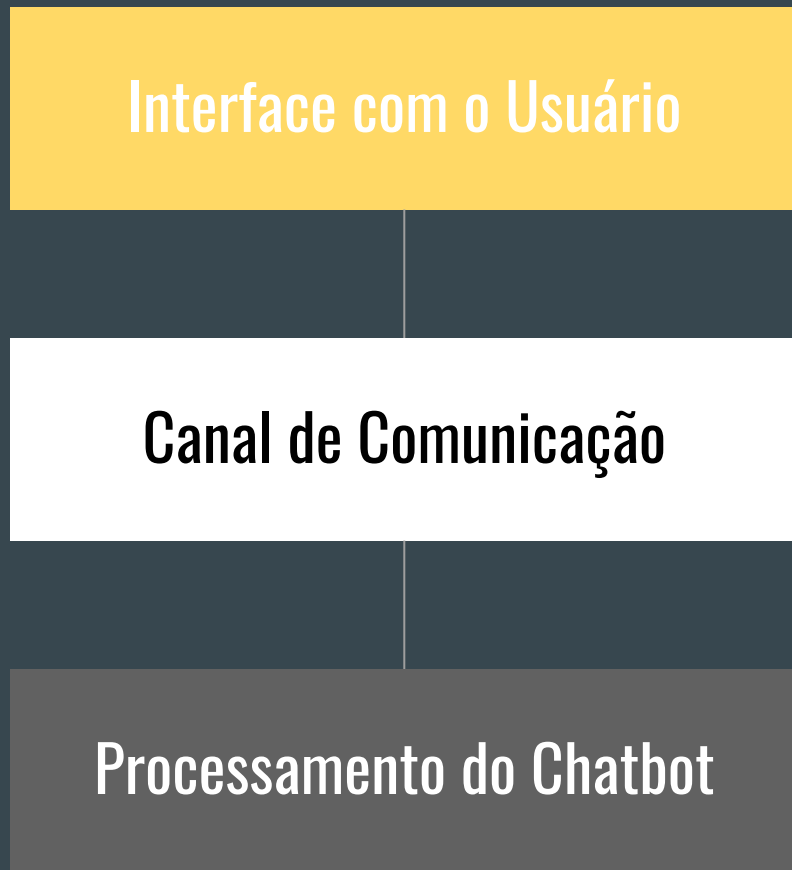


```
graph TD; A[Interface com o Usuário] --- B[Canal de Comunicação];
```

The diagram consists of two rectangular boxes connected by a vertical line. The top box is yellow and contains the text 'Interface com o Usuário'. The bottom box is white and contains the text 'Canal de Comunicação'. The vertical line connects the bottom center of the yellow box to the top center of the white box.

Canal de Comunicação

Um modelo de Chatbot



Processamento do Chatbot

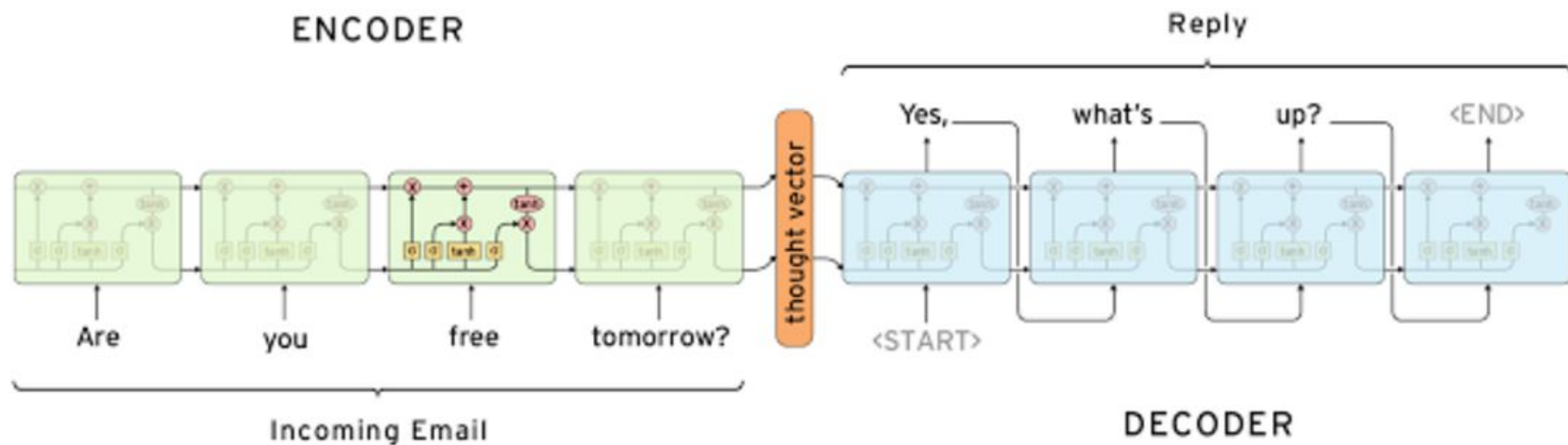


```
graph LR; A[Processamento do Chatbot] --- B[Generative]; A --- C[Retrieval-Based];
```

Generative

Retrieval-Based

Generative



Retrieval-Based

Usam um conjunto pré-definido de respostas e uma heurística para escolher a resposta apropriada baseado na entrada do usuário e no contexto.

Retrieval-Based

Baseado em Regras

```
If (...) {  
    if (...) {  
        If (...) {  
        }  
    } else {  
    }  
} else {  
}
```

Retrieval-Based

Baseado em Intenções

Detecta a Intenção -> Gera uma Ação

Retrieval-Based

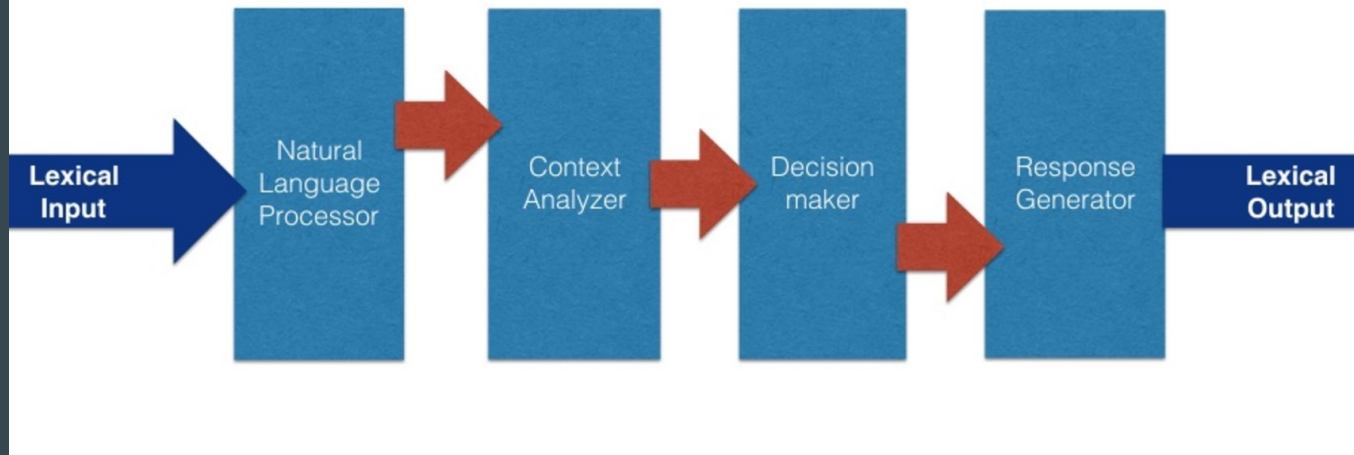
“De-para” com Machine Learning

Detecta o Contexto -> Gera uma Resposta Baseada num CMS

Retrieval-Based

Mais complicado que isso!

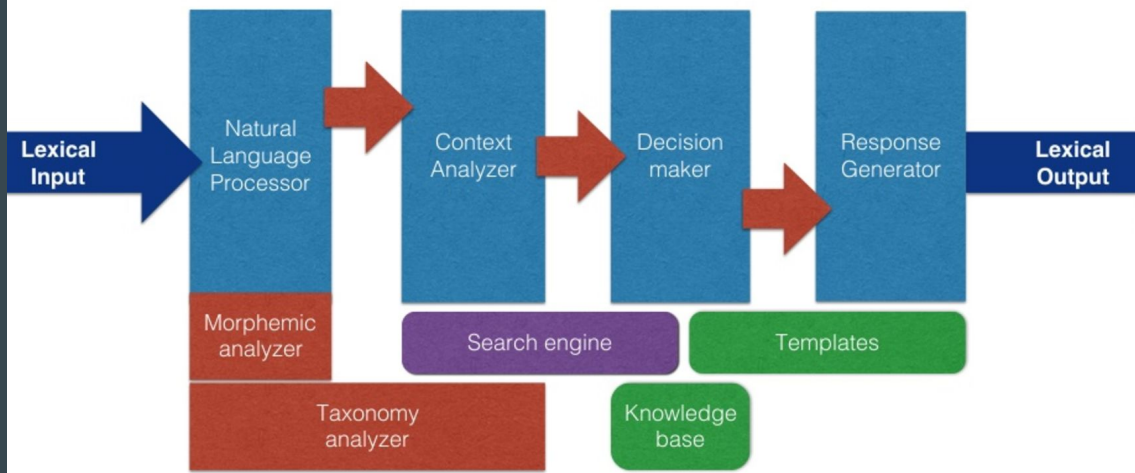
BASIC CHAT BOT COMPONENTS



Retrieval-Based

Mais complicado que isso!

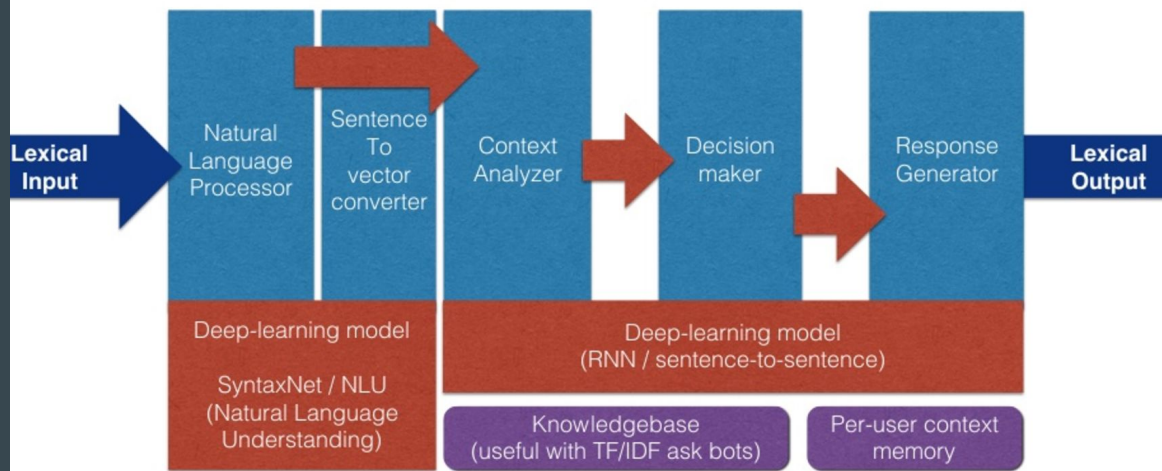
TRADITIONAL CHAT BOTS



Retrieval-Based

Mais complicado que isso!

CHAT-BOTS WITH MACHINE LEARNING



O que vamos fazer:

Detecta a Intenção

- >

Classifica numa Ação

Retrieval-Based

Baseado em Intenções

Detecta a Intenção -> Gera uma Ação

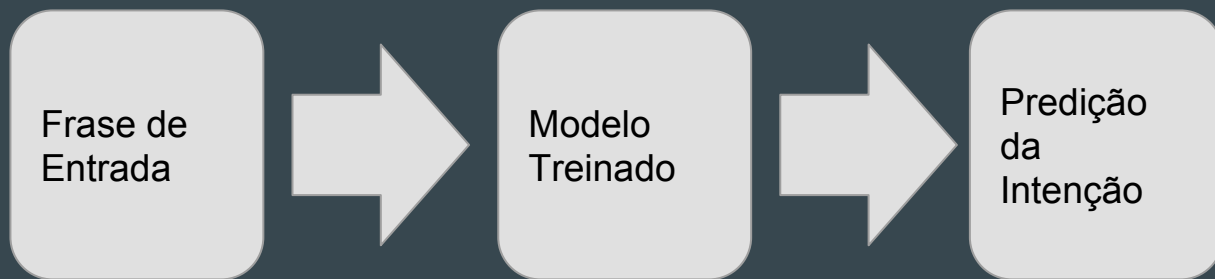
Treinamento



Treinamento



Teste



Rodando o classificador

```
$ python train.py
```

```
$ python eval.py --eval_train --checkpoint_dir="/runs/1234567890/checkpoints"
```