AASD 4004
Machine Learning - II

Applied AI Solutions Developer Program

Module 08
Chatbots

Vejey Gandyer

Agenda

Chatbots

Why Chatbots?

Evolution

Types of Chatbots

Simple Chatbot

FAQ Chatbot

Wiki Chatbot

SoTA Chatbots *
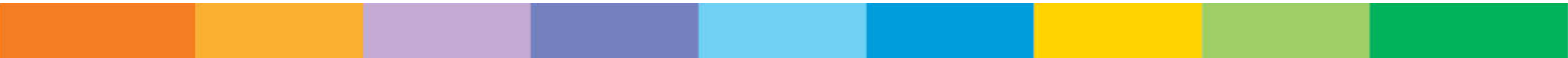
* Deep Learning – I course

Chatbots

What is it?

Chatbots

A chatbot is one that will answer your query

Captures the intent of the user query and matches with the best possible response as an answer
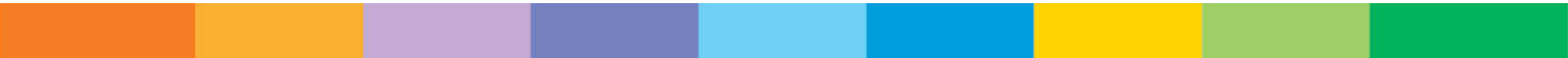
Why

Why Chatbots?

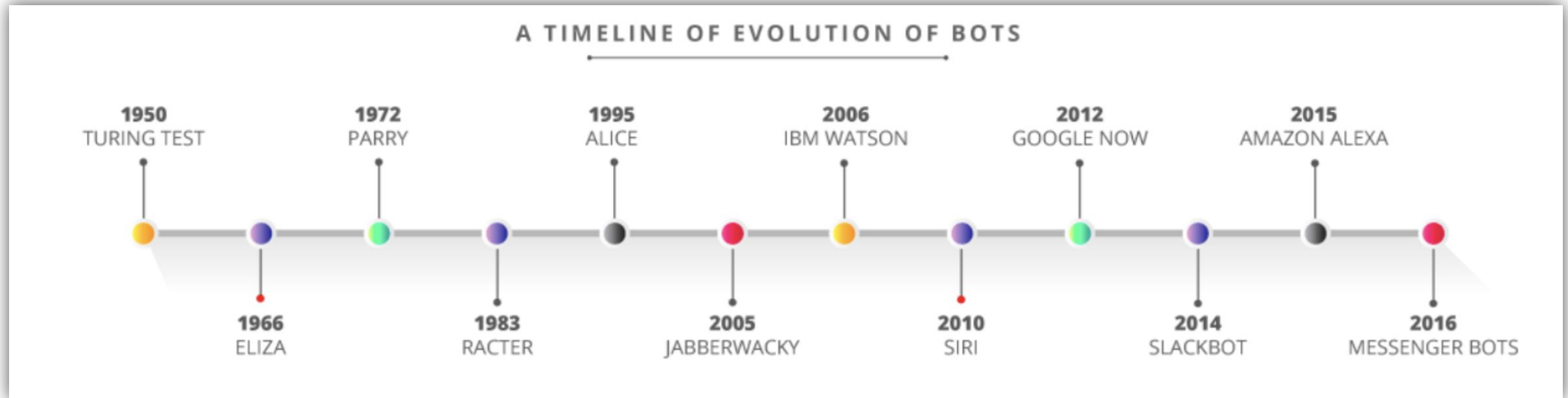To create an amazing user experience by answering questions

To decrease the manual labor by responding simple queries

Evolution

Evolution of Chatbots

A TIMELINE OF EVOLUTION OF BOTS

- **1950** TURING TEST
- **1966** ELIZA
- **1972** PARRY
- **1983** RACTER
- **1995** ALICE
- **2005** JABBERWACKY
- **2006** IBM WATSON
- **2010** SIRI
- **2012** GOOGLE NOW
- **2014** SLACKBOT
- **2015** AMAZON ALEXA
- **2016** MESSENGER BOTS

Types of Chatbots

Types of Chatbots

	RETRIEVAL-BASED	GENERATIVE-BASED
OPEN-DOMAIN	IMPOSSIBLE	GENERAL AI (Hardest)
CLOSED-DOMAIN	RULES-BASED (Easiest)	SMART MACHINE (Hard)

Types of Chatbots

Dumb bots (Rule based)

- Answer questions based on some simple rules that they are trained on.

Smart bots (Self-learning)

- Relies on Artificial Intelligence(AI) & Machine Learning(ML) technologies to converse with users.

- Retrieval-based chatbots

- Generative chatbots

Retrieval Chatbots

- Ranks the best response from a finite set of predefined responses

- Responses are entered

    - manually

    - based on a knowledge base of pre-existing information

Retrieval Chatbots Examples

What are your store timings?

Answer: 9 AM to 5 PM

Where is my order?

Answer: It's on its way and should reach you in 10 mins

Goal-oriented chatbot Applications

- Customer support
- Lead generation
- Feedback

Simple Chatbot using Python

Simple FAQ Chatbot

Simple Wiki Chatbot

SoTA Chatbot

Persona Chatbot

```
>>> hey how are you?
i'm doing great and you?
>>> I am ddamn good!
what do you do for work?
>>> I work as an AI Scientist.
oh that sounds interesting. i work as an attorney
>>> Attorney! Interesting. What do you specialize in?
what do you do for a living?
>>> I work
oh that's cool. do you have any hobbies?
>>> Yes, music
what kind of music do you like?
>>> trance
i love to listen to country music
>>> Cool. What are your hobbies?
i like to draw. i've a little boy owen.
>>> How old is owen?
he's a boy and he's 2.
>>> Ok. I have a 5 year old daughter.
i have a little boy owen.
>>> i know
my husband is a lawyer
>>> cool. My wife is a fashion designer
i don't care for cats
>>> what is your name?
i'm not sure
```

```
>>> So your name is NotSure
i am owen
>>> You are owen and you have a son named owen?
what is your name?
>>> Subash
i'm sorry i don't know.
>>> Subash is my name
how old are you?
>>> 39
i'm 45
>>> you said your husband is a lawyer right?
i'm a female
>>> What is your husband?
he's a corporate attorney
>>> What are your hobbies?
i love to paint.
>>> Paint what?
i like to go to pageantry.
>>> MMMM, so you are beautiful.
i used to compete in beauty pageantry.
>>> Nice, have you won any titles before?
no, but i'm sure you will win some.
>>> hahaha Thanks
i was once a pageant queen.
>>>
```

Exercise: Building Chatbots

Building Chatbots

Create a list of Chatbots

- Simple Python Chatbot

- FAQ Chatbot

- Wiki Chatbot

Further Reading

Python libraries
- wikipedia
- CountVectorizer
- TFIDFVectorizer