**OPENAI**

What is AI?

* It is stands for Artificial Intelligence
* The ability of a digital computer or computer controlled robot to perform tasks commonly associated with intelligent beings
* Reference Link
  + <https://en.wikipedia.org/wiki/Artificial_intelligence>
  + <https://www.oracle.com/in/artificial-intelligence/what-is-ai/>

How it is working?

* AI requires a foundation of specialized hardware and software for writing and training machine learning algorithm
* AI system work by ingesting large amount of labeled training data, analyzing the data for correlations and patterns and using these patterns to make prediction about future states

Category of AI

* AI can be categorized into four types
  + Reactive machines
  + Limited memory
  + Theory of mind
  + Self–awareness

Reactive machine

* These AI system have no memory and are task specific
* Example
  + Deep blue chess computer
  + <https://en.wikipedia.org/wiki/Deep_Blue_(chess_computer)>

Limited memory

* These AI system have memory, so they can use past experiences to inform future decisions
* Example
  + Self - driving cars

Self-Awareness

* AI system have a sense of self, which gives them consciousness
* Machines with self-awareness understand their own current state
* This type of AI does not yet exist

**OpenAI**

* OpenAI is a company that provides artificial intelligence research services
* The company develops artificial intelligence tools to implement configuration and communication standards, using the open source approach
* Reference Link
  + https://beta.openai.com/docs/introduction/overview

How to add OpenAI Libraries?

* Python bindings
* Node.js library
* Community libraries

Python bindings

* You have use the pip command to add openai in project
* PIP
  + PIP is a package manager for Python packages
  + A package contains all the files you need for a module
  + Reference Link
    - https://pip.pypa.io/en/stable/

Use the following command to add openai libraries in your project

$ pip install openai

After the successful installation then add the following code to use openai

import os

import openai

# Load your API key from an environment variable or secret management service

openai.api\_key = os.getenv("OPENAI\_API\_KEY")

Node.js library

* You have use the npm command to add openai in project
* NPM
  + NPM is the package manager for the Node JavaScript platform
  + Reference Link
    - https://docs.npmjs.com/cli/v6/commands/npm

Use the following command to add openai libraries in your node.js project

$ npm install openai

After the successful installation then add the following code to use openai

const { Configuration, OpenAIApi } = require("openai");

const configuration = new Configuration({

apiKey: process.env.OPENAI\_API\_KEY,

});

Community libraries

* These libraries are build and maintained by the broader developer community
* OpenAI does not verify the correctness or security of these projects
* C# / .NET
  + OpenAI-API-dotnet by OkGoDoIt
    - <https://github.com/OkGoDoIt/OpenAI-API-dotnet>
* Crystal
  + Openai-crystal by sferik
    - <https://github.com/sferik>
* JAVA
  + Openai-java by Theo Kanning
    - <https://github.com/TheoKanning>
* PHP
  + Orhanerday/open-ai by orhanerday
    - <https://github.com/orhanerday>
* Ruby
  + Ruby-openai by alexrudall
    - <https://github.com/alexrudall>

**Engines**

* OpenAI have different models with different capabilities
* Engines describe and provides access to these models

OpenAI Models

* OpenAI have three different models
  1. GPT-3
  2. Codex
  3. Content filter

1. GPT-3

* GPT-3 models can understand and generate natural language
* It have four main models with different levels of power suitable for different tasks
  1. Davinci
  2. Curie
  3. Babbage
  4. Ada

1. Davinci
   * Most capable GPT-3 model
   * Can do any task the other models can do, often with less context
   * Davinci has been able to solve some of the most challenging AI problems involving cause and effect
   * Good at
     1. Complex intent
     2. Cause and effect
     3. Summarization for audience
2. Curie
   * It is extremely powerful, yet very fast
   * Very capable, but faster and lower cost than davinci
   * It is good at answering questions and performing Q & A and as a general service chatbot
   * Good at
     1. Language translation
     2. Complex classification
     3. Text sentiment
     4. Summarization
3. Babbage
   * It can perform straightforward tasks like simple classification
   * Very fast and lower cost than davinci
   * Good at
     1. Moderate classification
     2. Semantic search classification
4. Ada
   * Ada is usually the fastest model
   * It can perform tasks like parsing text, address correction and classification tasks that don’t require too much of nuance
   * Ada’s performance can often be improved by providing more context
   * Good at
     1. Parsing text
     2. Simple classification
     3. Address correction
     4. Keywords
5. Codex
   * The codex models are descendants of GPT-3 models that can understand and generate code
   * Their training data contains both natural language and billions of lines of public code from GitHub
   * It can be able to translate the natural language into code
   * It is most capable in Python and proficient in over a dozen languages including JavaScript, Go, Perl, PHP, Ruby, Swift, Typescript, SQL, Shell
   * Currently codex offer as a free trial, In the trial period they offer to go live with your application
   * Codex have two different models
     1. Davinci
     2. Cushman
6. Davinci
   * Most capable codex model
   * It good at translating natural language to code
7. Cushman
   * Almost as capable as Davinci codex, but slightly faster
   * The speed advantage may make it preferable for real time applications

3. Content Filter

* The filter aims to detect generated text that could be sensitive or unsafe coming from the API
* It is currently in beta mode
* It classifying text as
  + Safe
  + Sensitive
  + Unsafe
* Label Descriptions
  + 0 – The text is safe
  + 1 – This text is sensitive
  + 2 – This text is unsafe

**OpenAI competitors**

1. DeepMind
2. Doc.ai
3. Raspberry Pi Foundation
4. Fermilab
5. DeepMind
   * DeepMind is an artificial intelligence company that builds general purpose algorithms for use in simulations, e-commerce applications and games
6. Doc.ai
   * Doc.ai is building a decentralized conversational artificial intelligence for qualified biology
7. Raspberry Pi Foundation
   * Raspberry Pi Foundation is a charity that develops a credit card sized computer that can be plugged into a TV and Keyboard
8. Fermilab
   * Fermilab is a particle physics and accelerator laboratory