Building AI Apps

Steamship

CS50 @ Harvard
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Aside: Yesterday's Hackathon: steamship.com/hackathon/harvard

Build Your Bot

Build and deploy an AI bot with personality, skills, and memory.

Steamship

HARVARD UNIVERSITY

Plympton

Nieman

CS50

Agenda

- What is GPT?
- How are people building with it?

What is GPT?

What is GPT?

Large Language Model

Neural Network

Text predictor

Agent

Universal approximator

Artificial intelligence

Writing assistant

Chatbot

Generative AI

Simulator

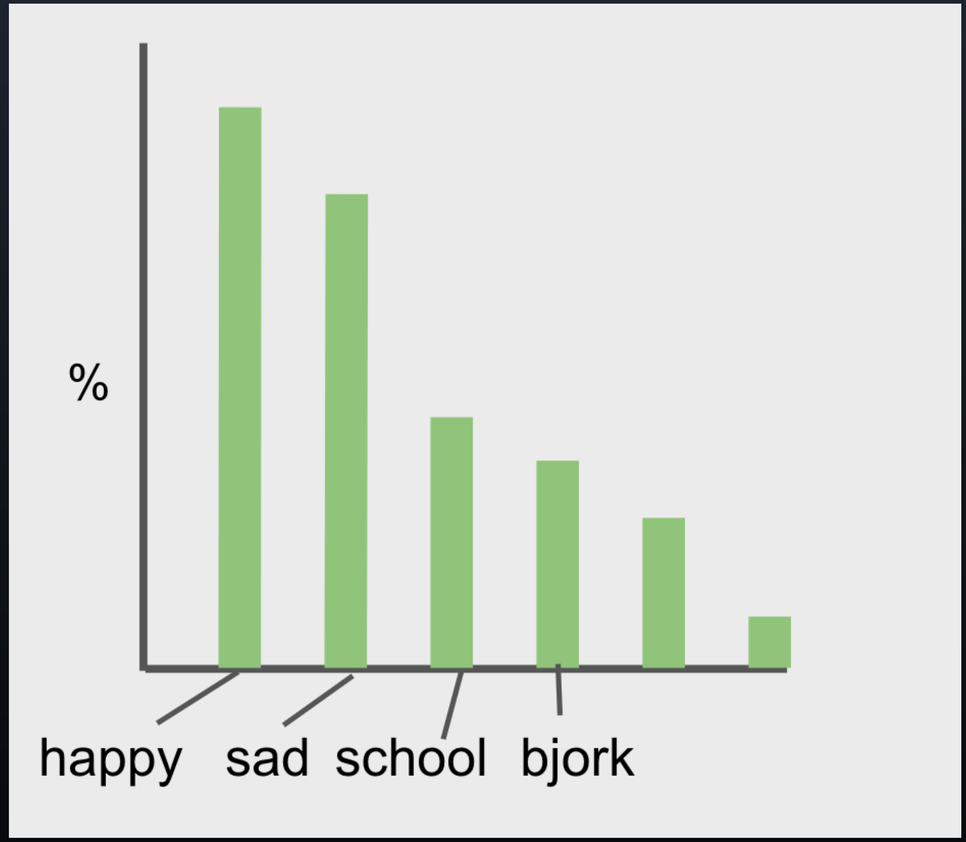
Content generator

Transformer

Language Models

Produce a probability distribution over some vocabulary

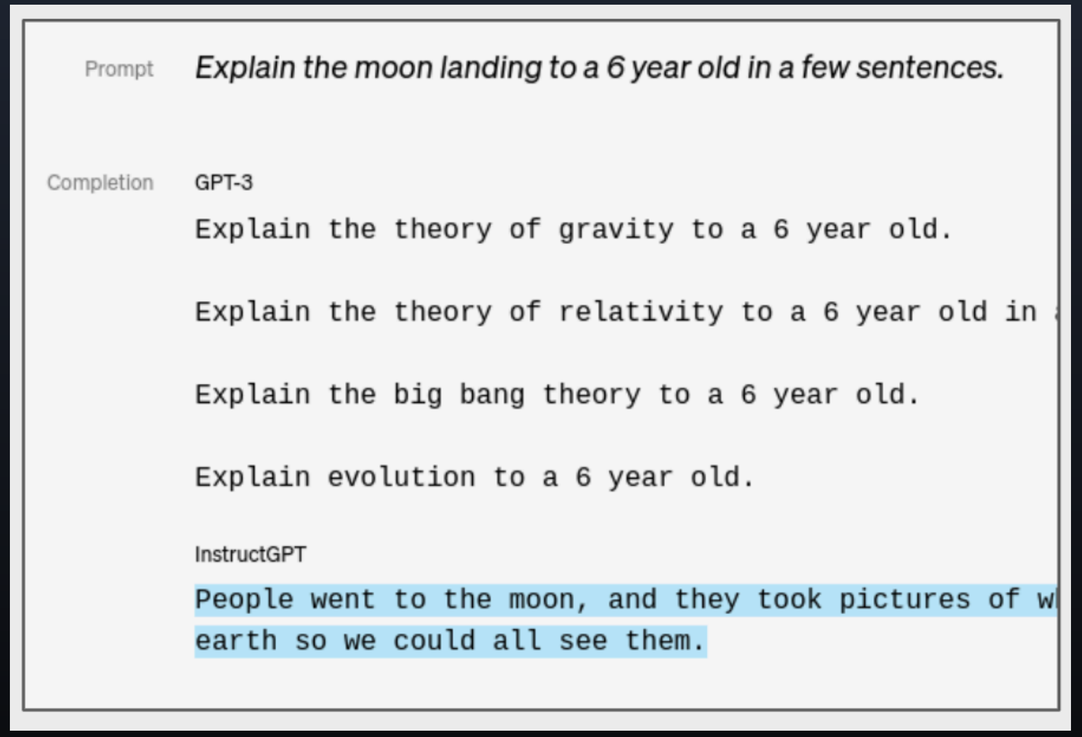
- What follows “I am…”?
- Vocabulary = all words
- Can sample predicted word repeatedly to generate text



Instruction Tuning

Natural language as an interface

- Dependable input/output is hard
- OpenAI InstructGPT (2022)
  - Lead to ChatGPT, GPT-4
- Solid foundation to build on



How are people building AI Apps?

Common GPT apps we're seeing

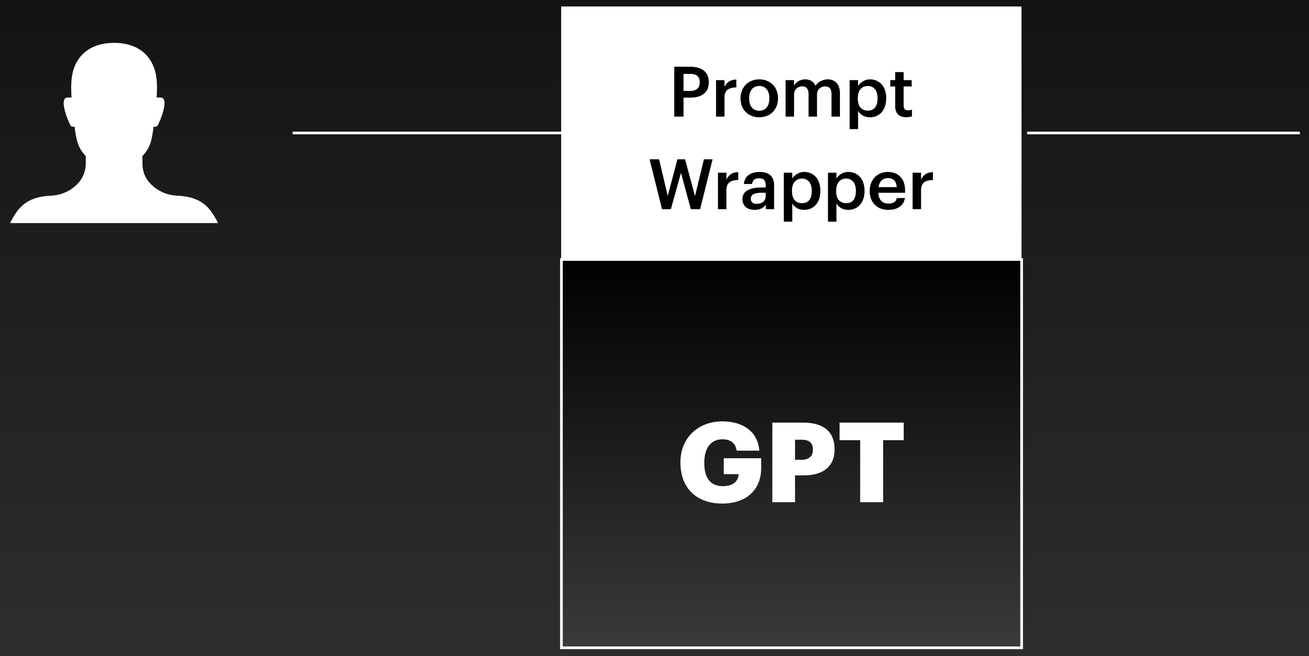
In production today

- Companionship
- Question Answering
- Utility
- Creativity

Experimental

- Multi-step task agents
- Hyper-personalization

Companionship



Personality

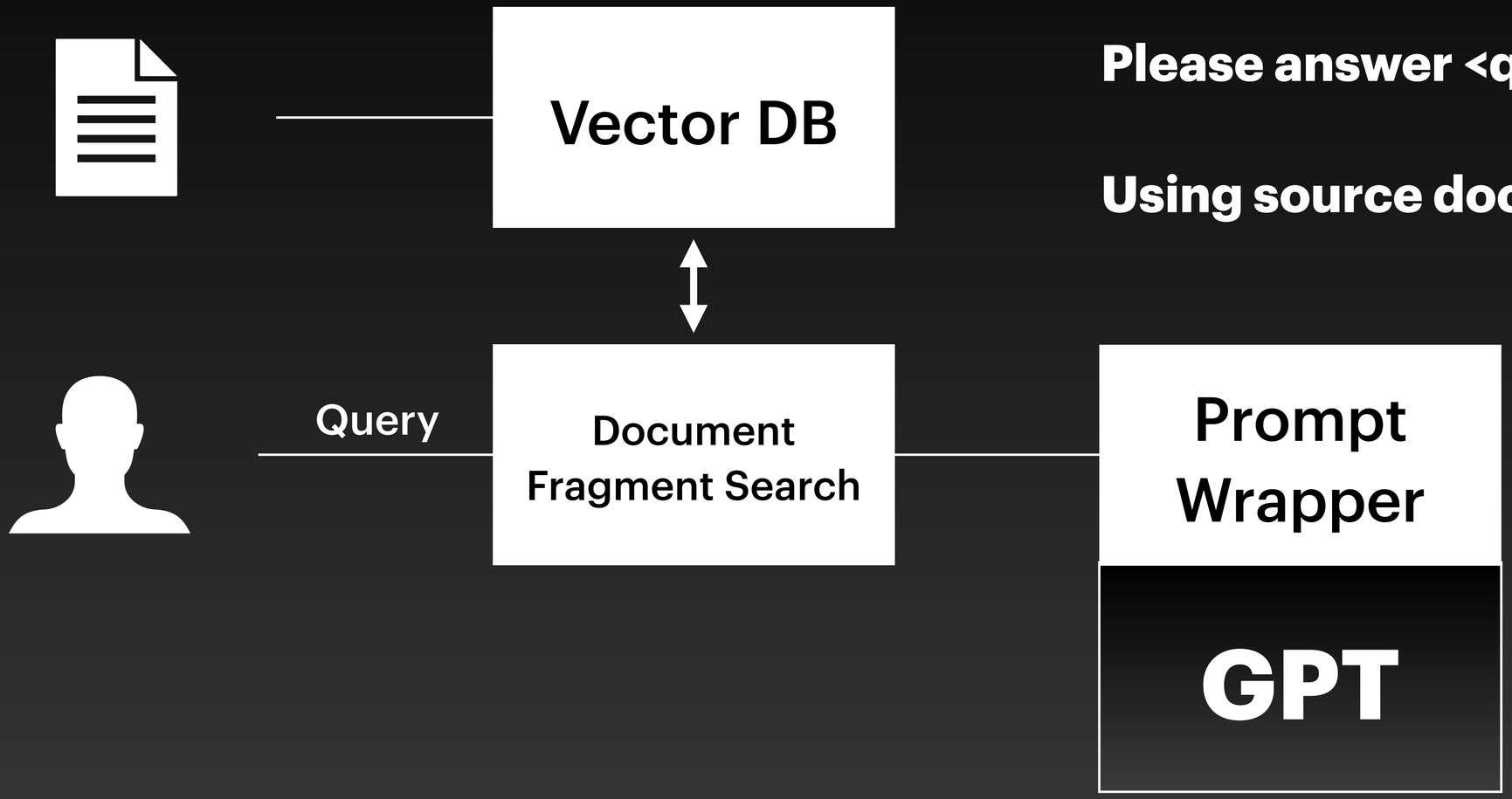
In Prompt Instructions

In Prompt “Database”

Demo: Mandarin Idiom Coach

Replit

Question Answering



“You are an expert at answering questions.

Please answer <question>

Using source documents <docs>”

Demo: Ask my Course

Loaded with CS50 Syllabus

GitHub

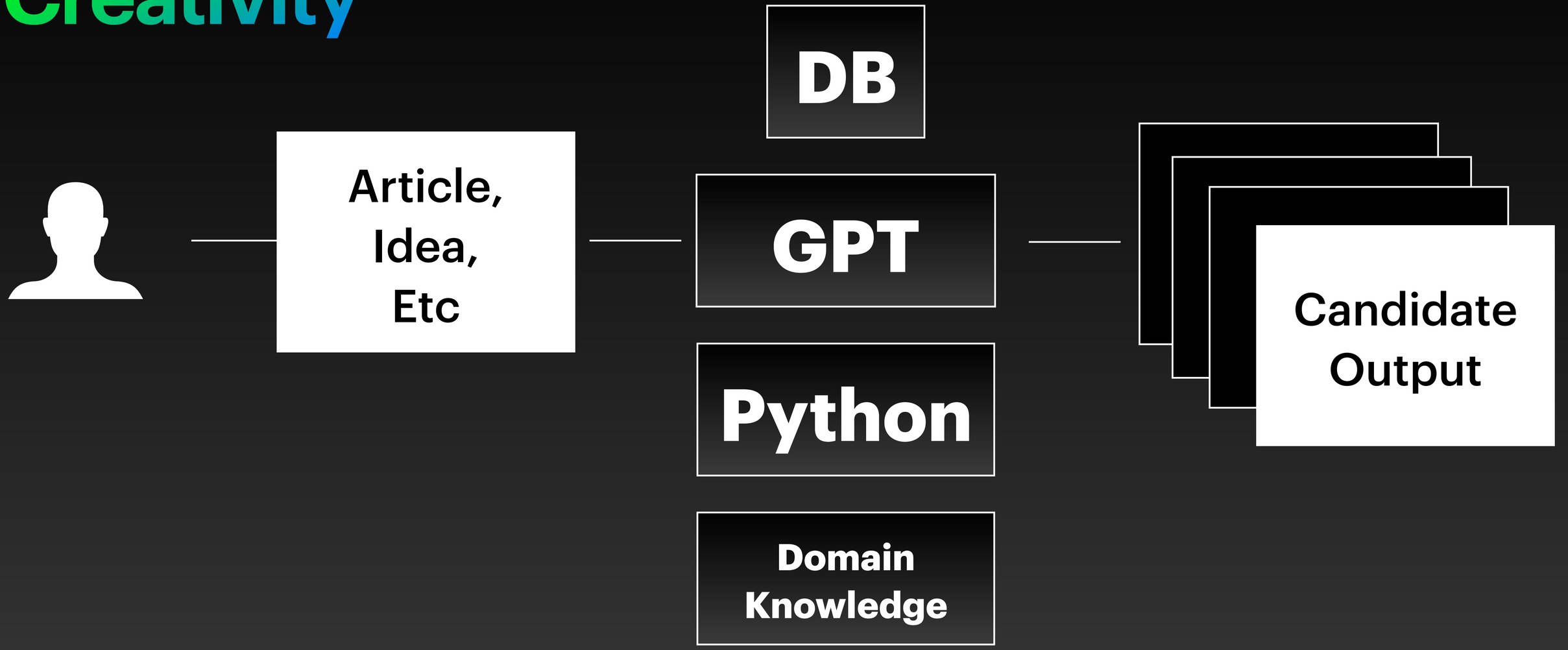
Utility functions

Low hanging fruits — automate tasks that require basic language understanding to perform.

- Generate a unit test for this function
- Scrape & summarize this website
- Tell me which Tweets to read

Incredible startup & personal project potential

Creativity



Demo: Reading Suggestions

GitHub

Multi-step Planning (AutoGPT, BabyAGI)

Code

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