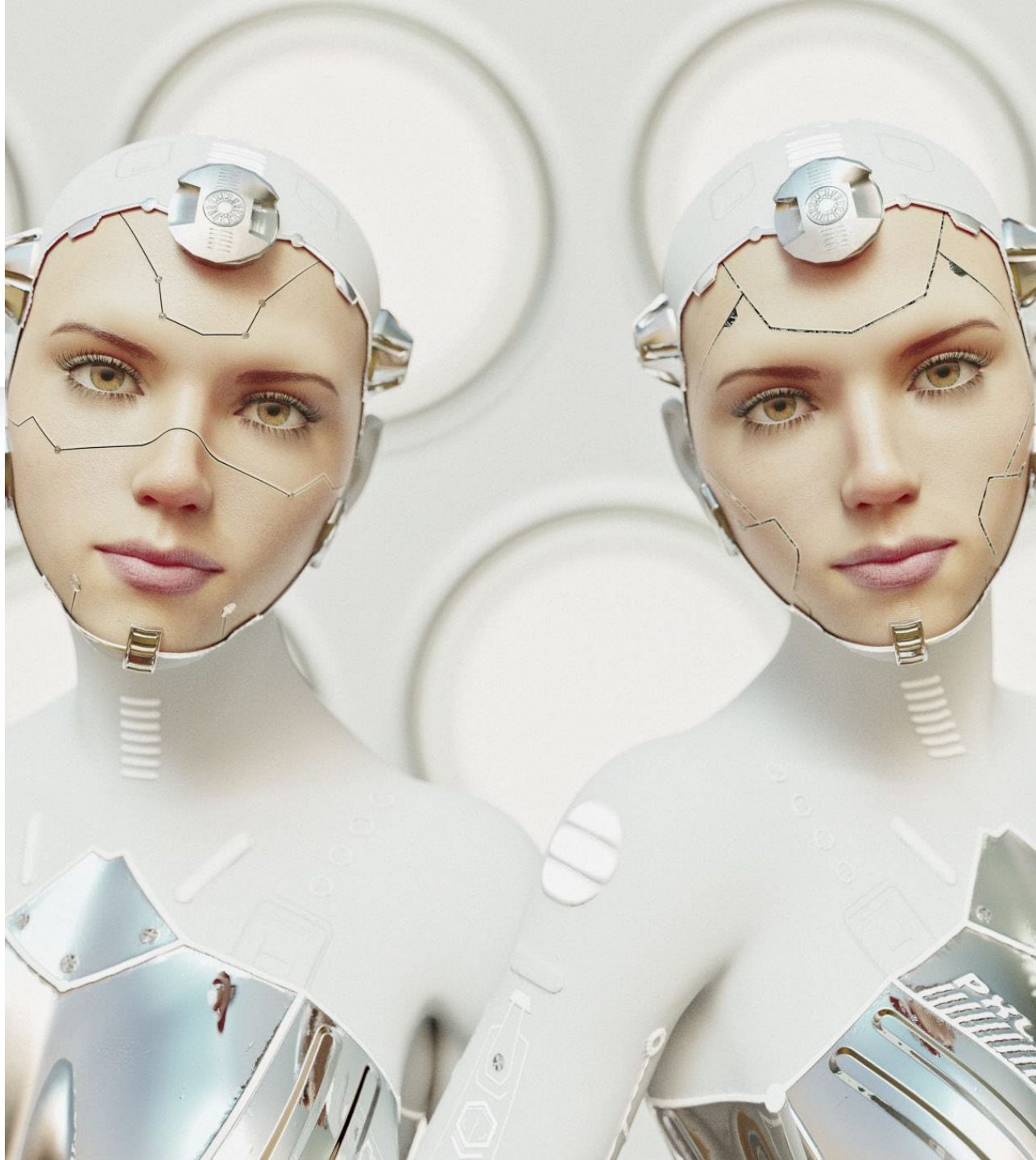
Artificial Intelligence:
What is it and how do we use it

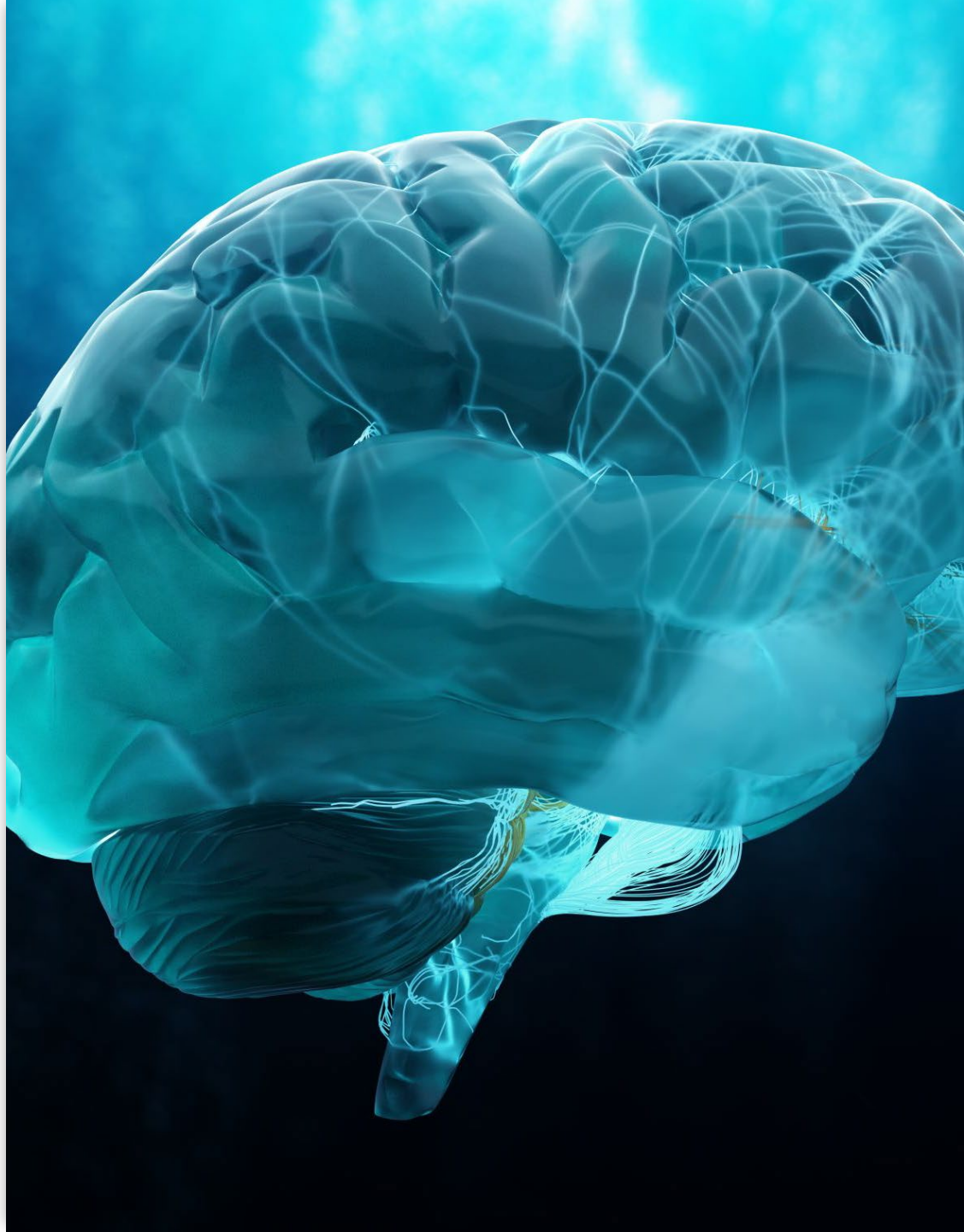
Stages of Artificial Intelligence

- **Narrow AI – Weak**
  - Performs limited, finite tasks.
  - Ex: Deep Blue, ChatGPT, Siri/Alexa
- **General AI - Strong**
  - Same intelligence as a human.
  - Theoretical (Turing).
  - Doesn’t exist. Yet.
- **Super AI – Skynet!**
  - Far exceeds human intelligence in every realm.
  - Dystopian.



Types of artificial intelligence

- **Reactive**
  - Simply responds to stimuli.
  - Little to no memory.
  - Ex: Deep Blue
- **Limited Memory**
  - Uses memory to “learn,” adapting & improving responses.
  - Today’s Tech
- **Theory of Mind**
  - Understands others’ thoughts, emotions, motivations, etc.
  - We are almost here
- **Self-Aware**
  - Smart as a human & aware that it is an intelligent being.

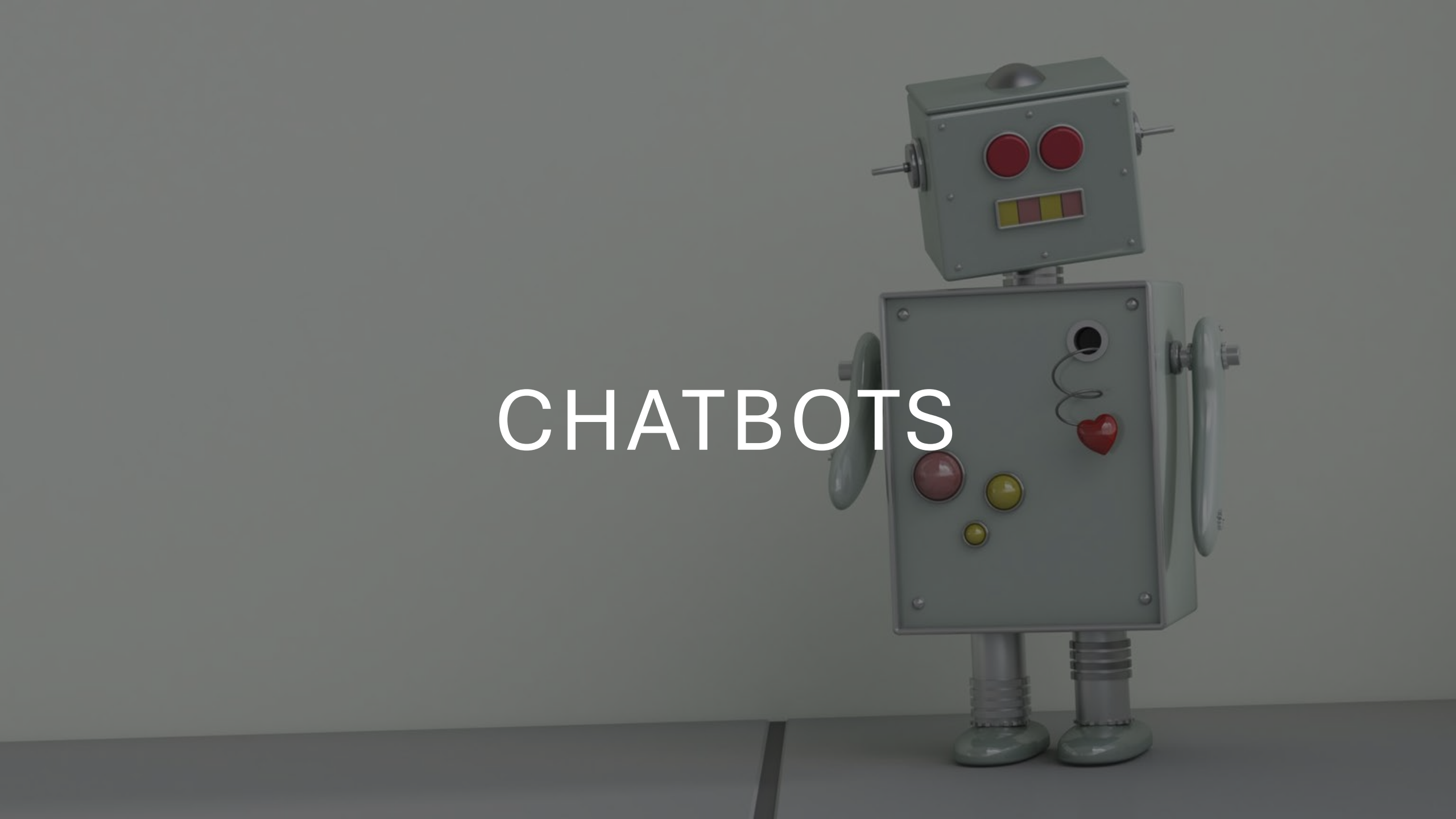


Today We have Narrow (weak) AI

Self Driving Cars	Smart Appliances	Digital Assistants (Alexa, Siri, Google)	Text Editors (Grammarly)
Banking and E-Commerce	Maps and Travel Apps	Facal ID	ChatBots (ChatGPT)

NFHS PLAY. PERFORM. COMPETE. TOGETHER.

CHATBOTS

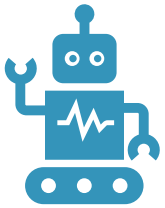


Chatbot Basics

Definition

Software that mimics a conversation with a human being

“Generates” or creates novel content



Also Known As

Generative AI

Large Language Model (LLM)

AI Chatbot

“ChatGPT”
(think: Xerox for copies)

Examples

ChatGPT (OpenAI)

Bard AI (Google)

Bing AI (Microsoft)

Llama (Meta)

More coming weekly

What They Do And Don’t Do

What it does do…

It predicts what the next word should be given based on what words are already there.

What it doesn’t do…

Have its own thoughts or Reason. It is not general AI nor All powerful

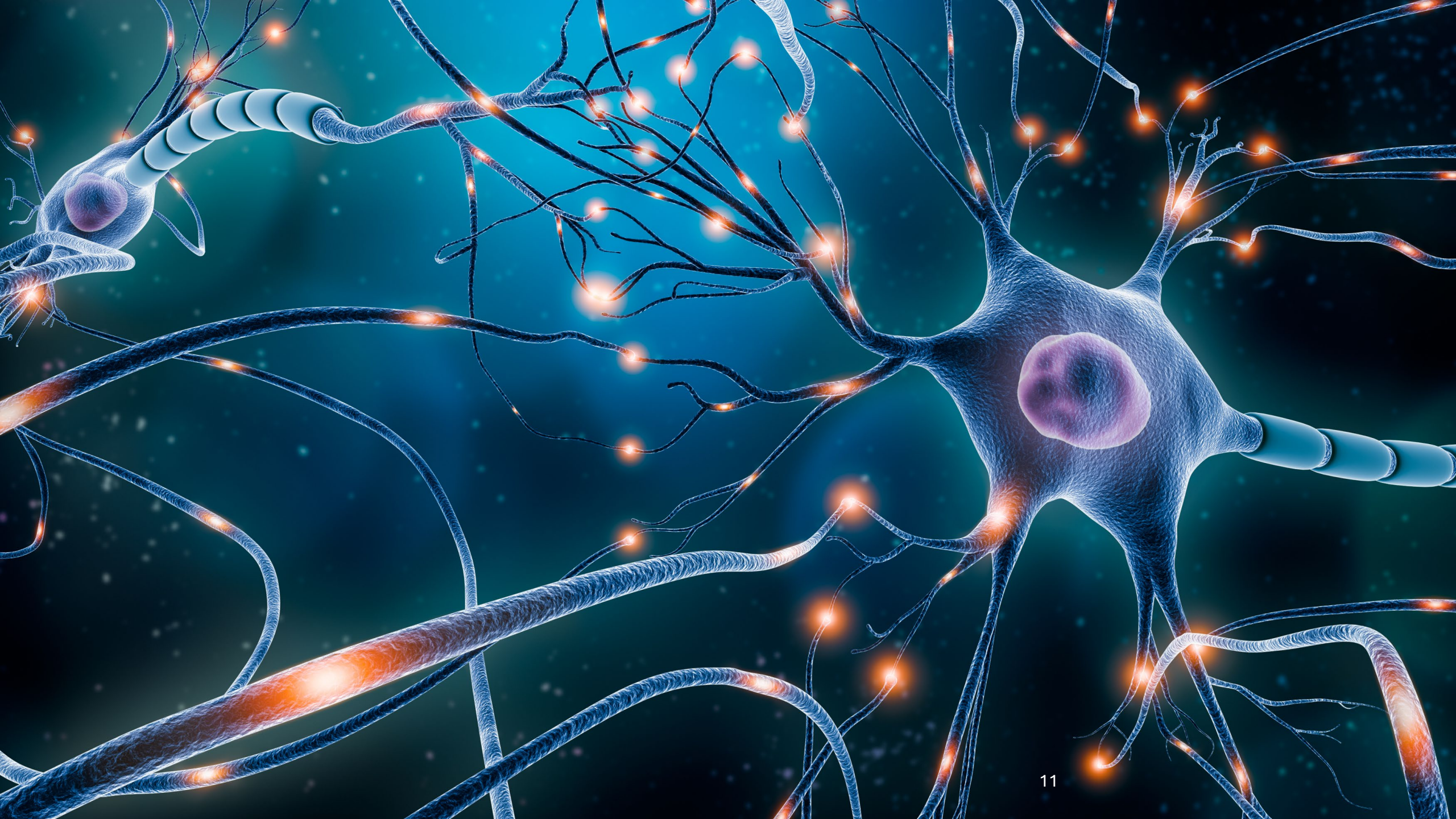
How Does It Do That?
Two Key Ideas Provide A Basic Understanding.

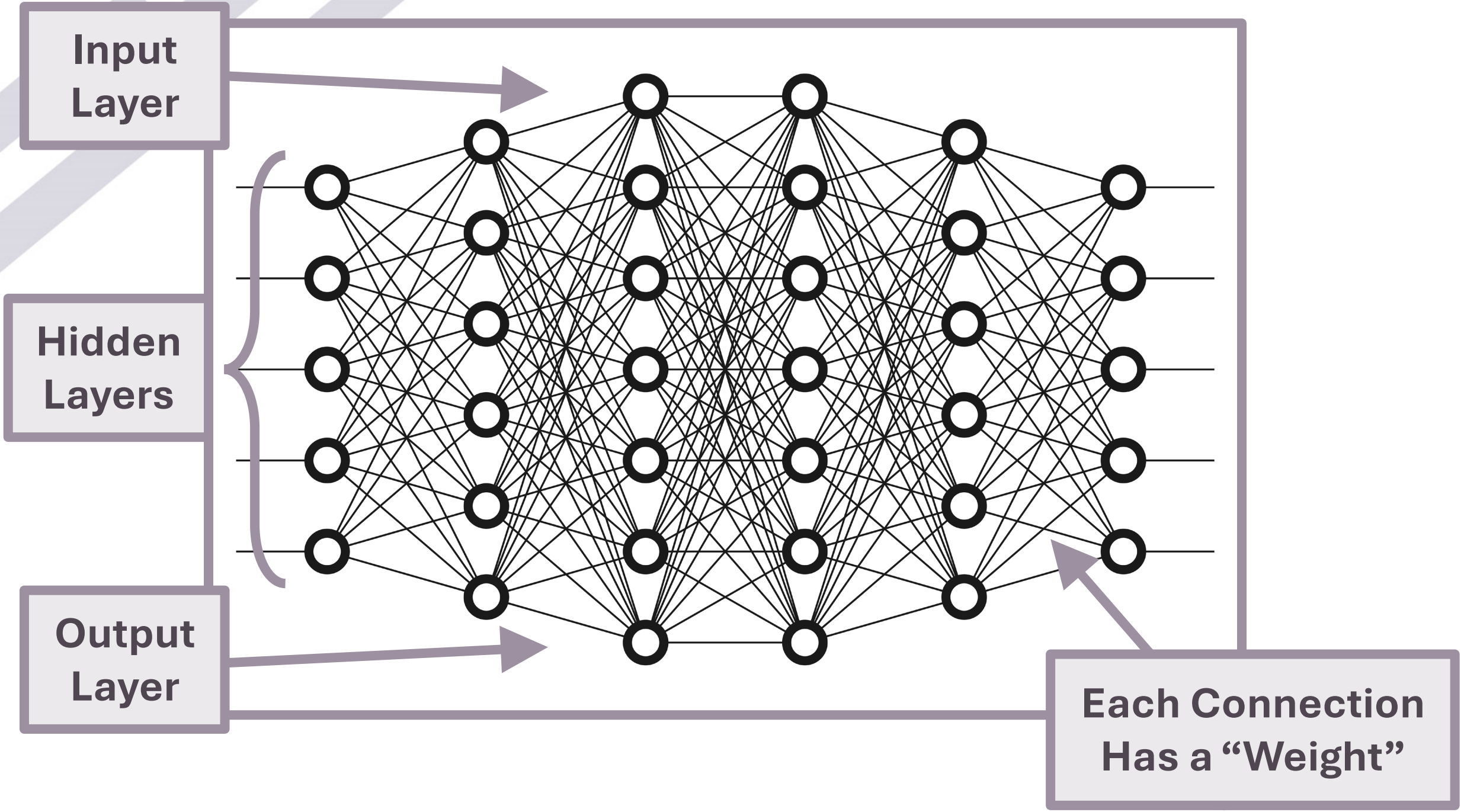
The Corpus

- **What is a "corpus"?** The body of information that ChatGPT has ingested.
- **What was ingested?** Several billion public web pages, 500m digitized books (overall, trillions of words).
- **How recent is it?** Through April 2023.

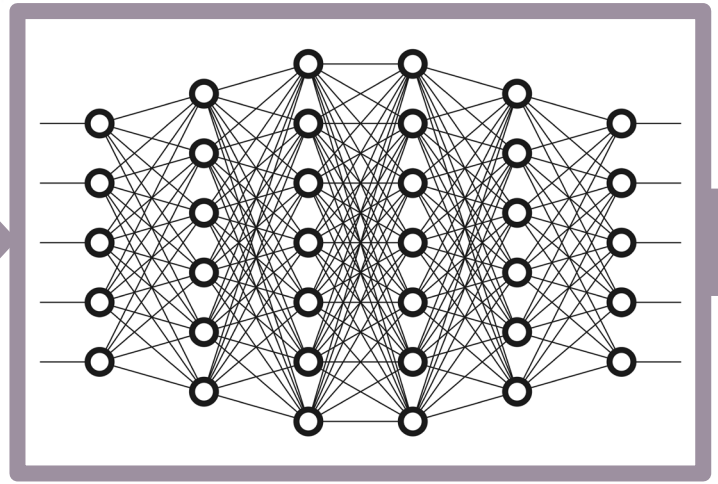
How It's Trained

- Based on a type of computer programming called a **neural network** that mimics the brain.
- Neural networks work on **end-to-end learning**, not step-by-step algorithms.




Input Layer
Hidden Layers
Output Layer
Each Connection Has a “Weight”

Billions of Webpages + 500 Million Books



175 Billion Connections with Various Weights

ChatGPT changes the weights of the connections based on that grade so that future responses are more accurate.

End to End Learning via Human Training

Input
A human inputs a query.

Output
ChatGPT generates a response.

Grading
A human grades that response.

PLAY. PERFORM. COMPETE. TOGETHER.

That’s how it gets facts correct . . .

But is seems so humanlike and realistic?

Reasonable continuation & variance

If I input the prompt:

Boston, MA is . . .

ChatGPT uses its 175 billion connections to make a ranked list of words that are a reasonable continuation of this sentence.

But (it turns out that) **always picking the top choice produces flat, circular, boring language.**

Variance

Not always picking the top choice (in fact, frequently *not* picking the top choice) **makes language more humanlike.**

Variance is where it “comes alive”

- **If I input the prompt: Boston, MA is…**
  - I would expect: Boston is the capital of MA and the most populous city in the state.
- **But I also get more interesting ideas:**
  - Boston is the birthplace of the United States
  - Boston is renowned for its outdoor recreational opportunities and historical insights

Artificial Intelligence:

How do we us it?

What it’s good at:

- Speech writing
- Idea generation
- Document review
- Communication Assistance
- Administrative Support
- Educational Content Creation
- Event Planning and Coordination
- Data Management
- Policy and Procedure Development
- Resource Allocation
- Professional Development

What it is NOT good at:

- Decision Making
- Handling Sensitive Information
- Providing Legal or Medical Advice
- Real-Time Crisis Management
- Personal Counseling or Therapy
- Physical Event Setup and Coordination
- Overriding Human Expertise
- Guaranteeing 100% Accuracy
- Creating Usable Images

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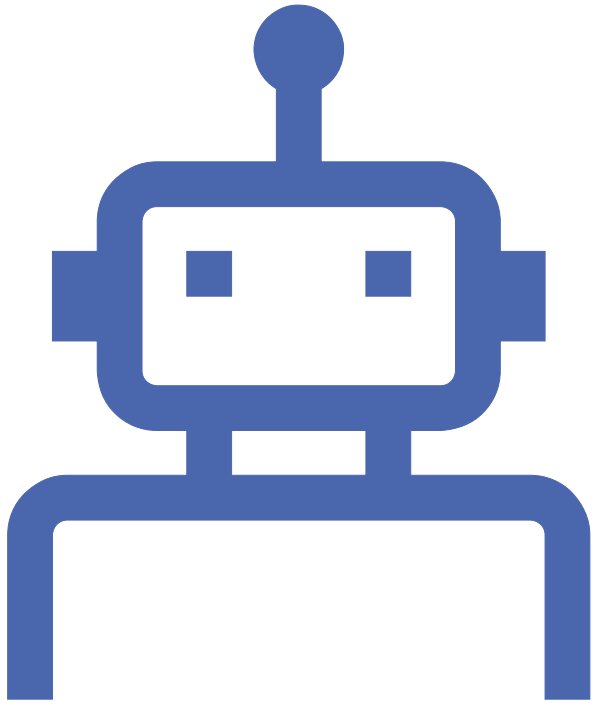

Let’s check it out!

What States Need to Do

- Conduct a Needs Assessment
- Research and Benchmarking
- Form an AI Task Force or Committee
- Draft an AI Policy
- Public Consultation
- Finalize and Approve the Policy
- Pilot AI Initiatives
- Develop Training Programs

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