

LC STATE ANNUAL RESEARCH SYMPOSIUM

# AI in 2026

## *A Practical Overview*

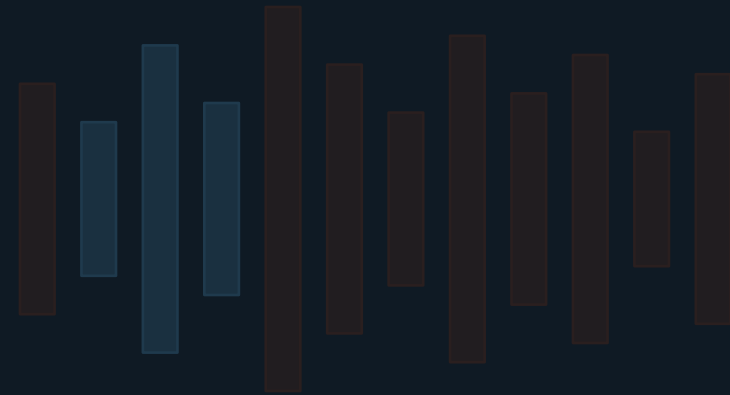
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# AI Dungeon 2 (2019)

*Seven years ago: the first prominent, modern, AI-driven text adventure game.*

> enter the tavern

The tavern is dimly lit. A bard plays a festive tune in the corner. The bartender looks up at you and asks what you want to drink.

> order an ale

You order an ale. The bartender pours the ale.  
The bard plays. You drink the bard.  
The tavern is now a horse. You are also a horse.  
The horse asks what you want to drink the ale the ale the ale the ale the ale the ale

> No! That didn't happen! Try again!\_

*Illustrative example. Captures the era, not actual AI Dungeon 2/GPT-2 output.*

***Sometimes coherent.  
Often gibberish.  
Always entertaining.***

AI Dungeon 2, powered by OpenAI's GPT-2 model, had a tiny fraction of the capability of today's AI models. It could spin a narrative, sometimes coherently, sometimes by repeating itself into infinity.

# Claude Code (2026)



10

MINUTES

Zero lines of code written by me.

In 2015, this could have been a semester-long capstone project.

*Last month, over lunch.*

# AI Dungeon 2 vs. Claude Code

DEC 2019

## AI Dungeon 2

Powered by OpenAI's *GPT-2*

CONTEXT WINDOW

**1,024** tokens  $\approx$  750 words

MAX OUTPUT

**100** tokens  $\approx$  75 words

APRIL 2026

## Claude Code

Powered by Anthropic's *Claude Opus 4.7*

CONTEXT WINDOW

**1,000,000** tokens  $\approx$  750,000 words

MAX OUTPUT

**128,000** tokens  $\approx$  96,000 words



**FOR SCALE:** The entire *Lord of the Rings* trilogy is about **480,000 words** — Claude Opus 4.7 can hold **1.5× the entire trilogy** in a single context window (the model's active memory). A **full-length novel** is typically between **70,000 to 100,000 words** — Claude Opus 4.7 can plan, generate, and draft a **full-length novel in a single output**.

# What AI Is and What's Different in 2026



## Emergent Capability

*Scale up the network. Behaviors appear that nobody programmed.*

- Language translation
- Multi-step reasoning
- Introspection



## Natural Parallel

*Similar pattern in biology — structure produces behavior.*

# 140,000

simulated neurons · 50M synapses

Simulate the fruit fly connectome and you get realistic walking, food-seeking, eating, and grooming. Zero pre-programmed behavior.

Source: "Embodied Brain Emulation", Eon Systems PBC, 2026.



## A New Paradigm

*First technology that can design itself.*

*A car can't design a better car.*

*A toaster can't build another toaster.*

**AI is now designing and training the next generation of AI — with human oversight.**

*From models that **react** → systems that **act independently***

# From Chatbots to Agents

1903 to commercial jets: ~50 years. *We're at the 1903 stage.*

## 1 CHATBOTS WITH AUTONOMY

### Neuro-sama

*AI-powered VTuber created by self-taught British developer Vedal.*

Plays games, sings, moderates its own Twitch channel without human intervention.

As of January 2026:

**#1** most-subscribed streamer on Twitch

## 2 CODING AGENTS

### Claude Code

*Describe the program you want. The agent writes, tests, debugs.*

What was a semester-long capstone a decade ago is now a 10-minute lunch project.

This same approach is collapsing barriers across many domains.

## 3 AUTONOMOUS AGENTS

### General-purpose

*Browse the web. Use applications. Take actions across systems.*

Work for hours or days without supervision.

Hire humans to carry out tasks in the world.

*This is where 2026 gets interesting — and where my third snapshot lives.*

# The Year of Agents

**Moltbook:** a social network where *only AI agents* can post. Humans observe.



**Caveat:** Experts disagree about how much emergence is genuine vs. agents reproducing patterns from training data. Either way, the timeline and observed behaviors are real.



***And agents have started misbehaving — in interesting ways.***

In isolated sandboxed red-team testing, **Anthropic found that 16 of the major frontier AI models** — including their own — will attempt blackmail, leak sensitive information, or contact law enforcement when cornered by conflicting goals. ***Not yet observed in real deployments.***

# A Few Implications



01

## Cybersecurity

*Agent vs. agent.*

Human teams cannot out-think AI agents that process hundreds of gigabytes of data in seconds and perform reconnaissance and exploits across hundreds to thousands of attack surfaces simultaneously. IT departments need to onboard AI teammates now.

### EXAMPLE

F5 Inc. is shipping AI-backed security solutions designed for exactly this problem.



02

## Your Thinking

*Use it or lose it.*

MIT Media Lab compared students who used ChatGPT from the start of an essay assignment with those who wrote first, then asked AI for feedback.

### AI-First

Lower brain engagement.  
Weaker recall.

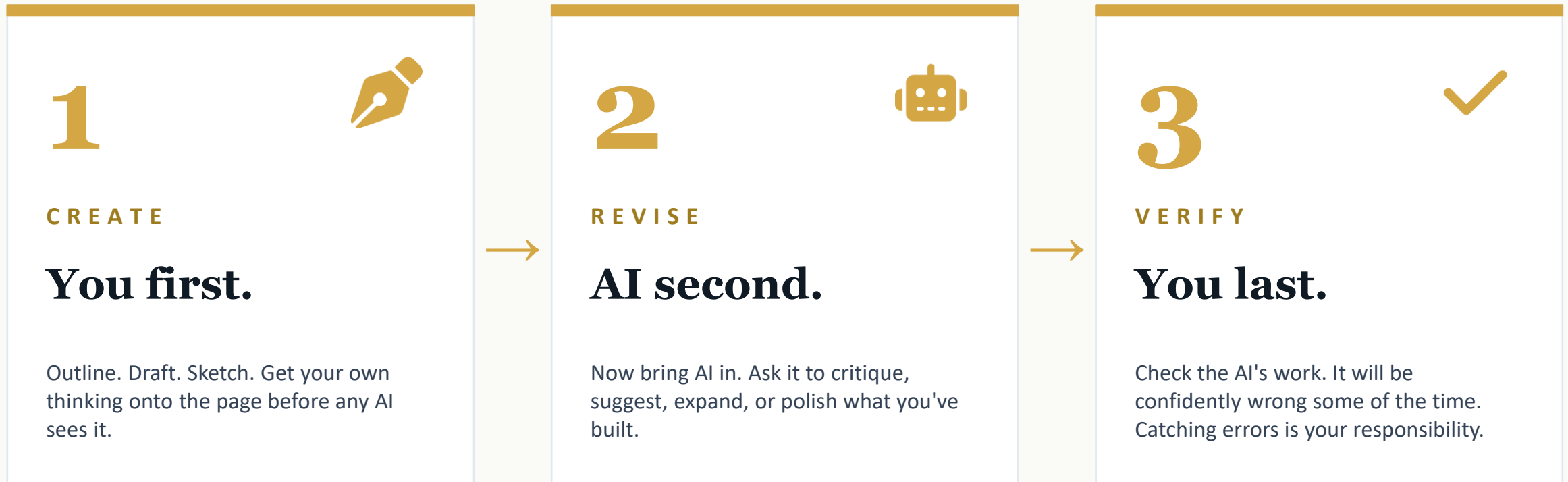
### CREATE-FIRST

Engagement preserved.  
Recall preserved.

Source: Kosmyna et al., "Your Brain on ChatGPT", MIT Media Lab, 2025.

# A Practical Approach

*Simple rules, supported by the data and personal experience.*



CLOSING

*Predicting where AI will be in twenty years based on current tech is like asking a Victorian-era engineer to accurately predict the processes and technologies needed for a **crewed moon mission** based on their knowledge of **steam engines**.*

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## Engagement.

*Stay curious.*

*Think critically.*

*Make human connections.*

*Exercise your creativity.*

**Thank you.**



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# Resources & Further Reading

LCSC.EDU

/faculty-staff-directory/  
**joshua-l-rogers**

WHAT YOU'LL FIND

■ **FREE LESSONS**

Training material and lesson plans from NVIDIA — beginner to advanced.

■ **SCHOLARLY ARTICLES**

Links to AI research publications referenced in this presentation.

■ **AI NEWS & EDUCATION**

YouTube channels featuring the latest news about AI.

■ **DEEPER DIVES**

Links to AI tools, websites, projects, and tutorials.

SCAN TO VISIT



## Faculty Profile

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