

# HOW TO WRITE A COLLEGE LEVEL PAPER USING AI CHATBOTS

CONNOR HOGAN

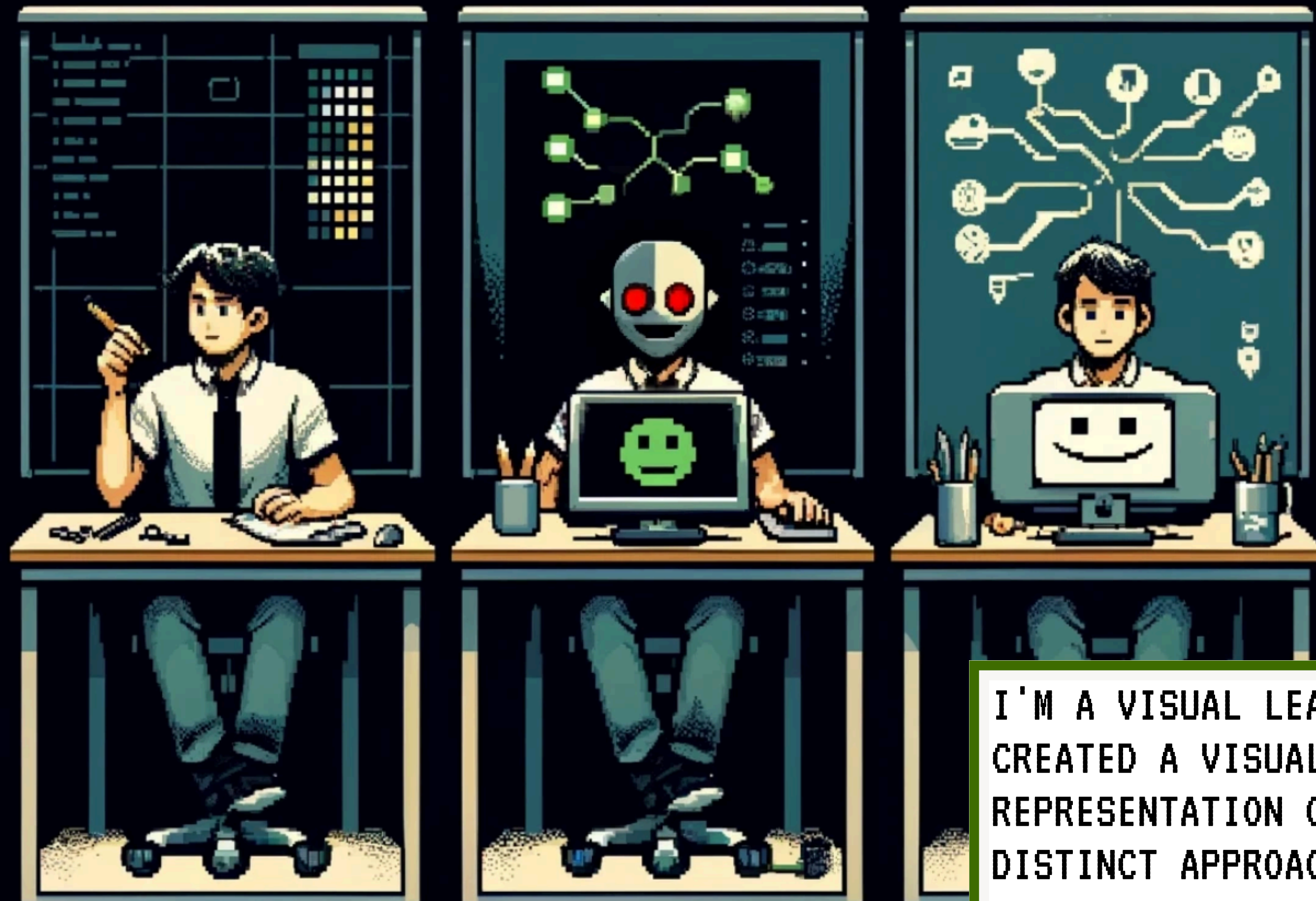
NOTE: THIS MANUAL IS SOLELY INTENDED TO BE USED FOR WORK WHEN TEACHER'S APPROVE OF THE USE OF AI IN WRITING.

PRO TIP: AS THE STUDENT WHO CURATED THE DIGITAL REVOLUTION DATABASE, I READ 60+ AI-ASSISTED TERM PAPERS. I HAVE SEEN HOW FREQUENTLY CHATBOTS USE THE EXACT SAME PHRASES/PATTERNS ACROSS ALL TYPES OF WRITING.

IT IS NOT DIFFICULT TO DISCERN AI-GENERATED WRITING IF YOU KNOW WHAT TO LOOK FOR.

The first page of my term paper, *AI Vanguard*, advocates for educators to consider the distinction between “competence evaluations” and “innovation evaluations” and makes the case for, when assigning an **innovation evaluation**, why they should not only permit, but actively encourage the use of AI tools to push the boundaries of what students are capable of producing.

If you search “AI Vanguard” on the [AIInnovatorsArchive.com](https://AIInnovatorsArchive.com) site, you can find it.



I'M A VISUAL LEARNER, SO I  
CREATED A VISUAL  
REPRESENTATION OF THREE  
DISTINCT APPROACHES TO  
ACADEMIC WRITING.



# TRADITIONALIST METHOD

YOU'RE ALL FAMILIAR WITH IT.

- RELIES EXCLUSIVELY ON IDEAS GENERATED BY THE STUDENT'S OWN MIND
- SENTENCES CRAFTED USING ONLY THE INDIVIDUAL'S COGNITIVE ABILITIES
- AI ASSISTANCE VIEWED AS A FORM OF CHEATING





# AI BLACKBOX METHOD

THIS WAS MY FIRST STRATEGY.

- RELIES **ENTIRELY** ON AI TO GENERATE CONTENT FROM **START TO FINISH**
- IT IS NOT UNLIKE HOW YOU MIGHT USE CHEGG TO 'SOLVE' A PROBLEM IN AN ACCOUNTING CLASS, WHERE IT GIVES YOU THE ANSWER STRAIGHT AWAY WITHOUT YOU HAVING TO EXPEND ANY BRAIN POWER.

# AI BLACKBOX METHOD


















FIRST I TRIED GROK...

"YOUR TASK IS TO WRITE A CLEAR AND COHERENT ESSAY ON THE QUESTION 'DESCRIBE THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE FROM TURING TO LARGE LANGUAGE MODEL CHATBOTS' WITH A MINIMUM OF 2,500 WORDS."








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Artificial Intelligence (AI) has come a long way since its inception in the mid-20th century. The field has seen tremendous growth and advancements in technology, leading to the development of sophisticated AI systems that have revolutionized the way we interact with machines. This essay will explore the development of AI, from its early beginnings with Alan Turing to the cutting-edge large language model chatbots that are shaping the future of communication.


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Introduction

Artificial Intelligence (AI) has come a long way since its inception in the mid-20th century. The field has seen tremendous growth and advancements in technology, leading to the development of sophisticated AI systems that have revolutionized the way we interact with machines. This essay will explore the development of AI, from its early beginnings with Alan Turing to the cutting-edge large language model chatbots that are shaping the future of communication.

The concept of artificial intelligence can be traced back to ancient Greek mythology, with the story of Talos, a giant bronze automaton that protected Crete from invaders. However, the modern field of AI was born in the mid-20th century, with the work of pioneering scientists like Alan Turing, John McCarthy, and Marvin Minsky. These early researchers laid the groundwork for the development of AI as we know it today, with their groundbreaking work on topics such as machine learning, neural networks, and natural language processing.

In the decades that followed, AI research continued to advance, with the development of new algorithms and techniques for solving complex problems. In the 1980s and 1990s, the field of AI experienced a period of renewed interest and investment, as researchers began to explore the potential of machine learning and artificial neural networks. This period saw the development of new AI applications in fields like computer vision,

 Search

### What's happening

THE RESULT FROM GROK WAS FAR TOO SHORT...

WHEN I ASKED GROK TO COMBINE VARIOUS OUTPUTS INTO A CONTINUOUS, WELL-STRUCTURED ESSAY IT REFUSED TO GENERATE AN OUTPUT LONGER THAN 500 WORDS.

MOREOVER, THE PROSE IS VERY DRY.

### #Denver

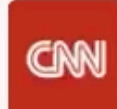

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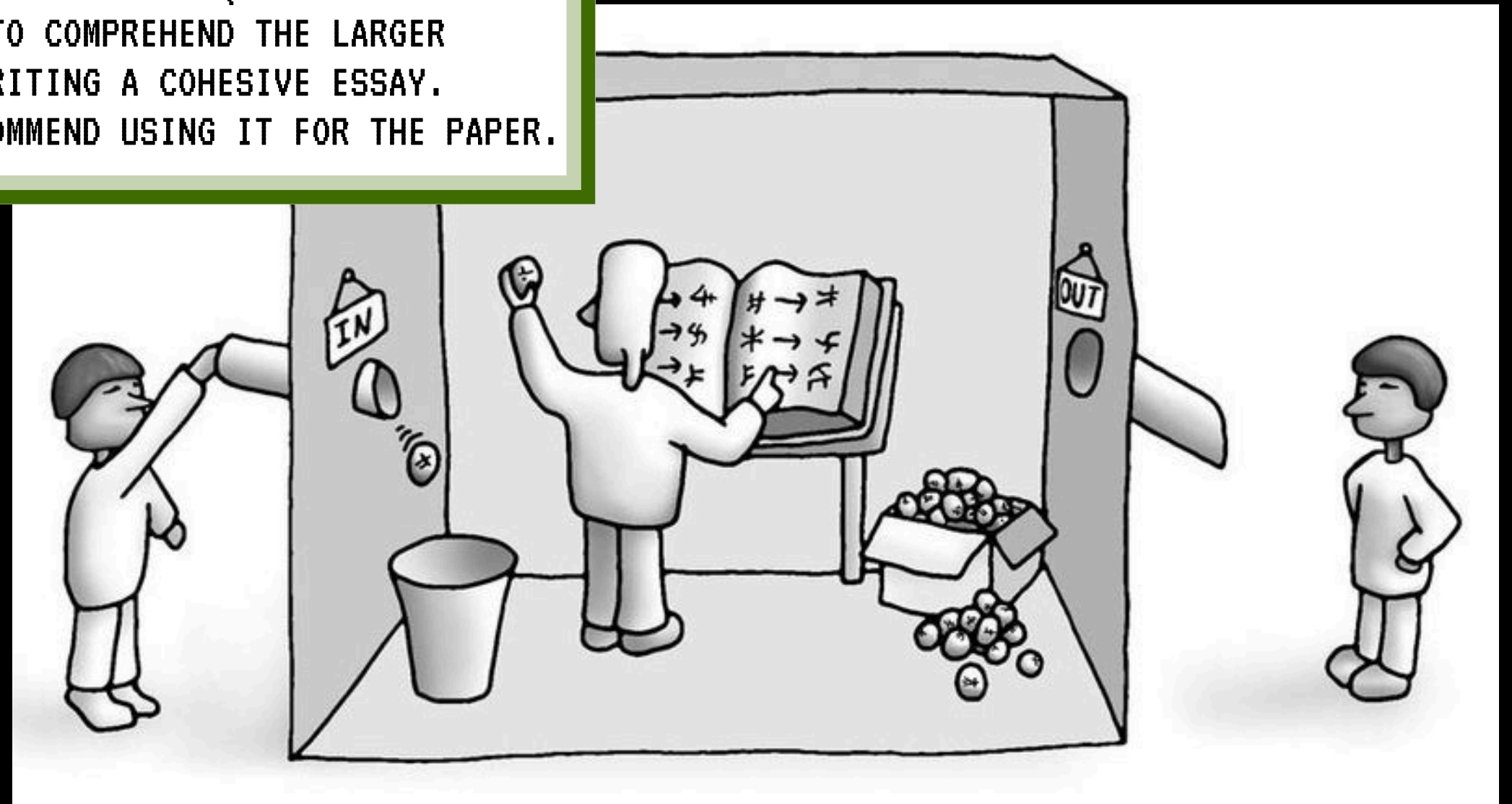
**Connor Hogan**  @connorjhogan

make each section longer and more detailed

GROK, LIKE MOST CHATBOTS SUFFER FROM WHAT I CALL '**EXTREME DIGITAL DEMENTIA.**' LIKE THE CHINESE ROOM THOUGHT EXPERIMENT, THEY CAN PROVIDE SEEMINGLY INTELLIGENT RESPONSES TO INDIVIDUAL QUESTIONS BUT LACK THE ABILITY TO COMPREHEND THE LARGER CONTEXT OF WRITING A COHESIVE ESSAY. I DO NOT RECOMMEND USING IT FOR THE PAPER.



~~Grok~~





# AI BLACKBOX METHOD



THEN I TRIED MICROSOFT COPILOT...

"YOUR TASK IS TO WRITE A CLEAR AND COHERENT ESSAY ON THE QUESTION 'DESCRIBE THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE FROM TURING TO LARGE LANGUAGE MODEL CHATBOTS' WITH A MINIMUM OF 2,500 WORDS."

## 6. GPT-4 and Beyond: The Turing Test Revisited:

GPT-4, the latest iteration, exemplifies the progress from Turing's vision. It can pass exams, complete tasks, and generate human-like text. However, the debate persists: Does it truly understand or merely mimic? Researchers grapple with how to evaluate these models, revealing their blind spots, highlighting the need for better evaluation methods <sup>1</sup>.

THAT OUTPUT WAS 9 SECTIONS, A LITTLE OVER 300 WORDS, AND IT READ LIKE A BUNCH OF TOP RESULTS ON A BING BROWSER STRUNG TOGETHER.

IT WAS VERY BAD. TRUST ME, YOU DO NOT WANT TO WASTE YOUR TIME WITH BING COPILOT.

## 7. The Black Box Dilemma:

LLMs remain black boxes. We lack a definitive "Geiger counter" to measure their intelligence. Some argue for glimpses of reasoning, while others remain cautious. The challenge lies in bridging the gap between impressive performance and genuine comprehension <sup>1</sup>.

## 8. Ethical Considerations and Responsible AI:

As LLMs become more powerful, ethical concerns arise. Bias, misinformation, and unintended consequences demand attention. Researchers strive for transparency, interpretability, and fairness in AI systems.

## 9. Future Prospects:

The journey continues. AI will evolve, perhaps converging with neuroscience and cognitive science. LLMs will refine their reasoning abilities, and new benchmarks will emerge. The quest for AI that truly understands remains our collective endeavor.

In conclusion, from Turing's visionary test to today's LLMs, AI has come a long way. As we navigate this ever-evolving landscape, let us tread carefully.



# AI BLACKBOX METHOD

## Gemini

THEN I TRIED GOOGLE GEMINI...

- IT PRODUCED A GREAT OUTLINE!
  - ONLY 1,335 WORDS
  - MANY BULLET POINTS
- VERY DRY PROSE
  - SIMILAR TO WIKIPEDIA ENTRY



# AI BLACKBOX METHOD



THIS PROMPT I USED LOOKS MORE COMPLEX THEN IT IS, I'M BASICALLY JUST EXPLAINING THAT I WANT THE INTRODUCTION TO TELL THE READER WHAT TO EXPECT FROM THE ESSAY, TO HAVE THE PROSE NOT SOUND LIKE A WIKIPEDIA PAGE, ETC.



## THEN I INPUT THE OUTLINE FROM GOOGLE GEMINI INTO CLAUDE

ADOPT THE ROLE OF AN EDITOR WHO USES A CONVERSATIONAL YET ERUDITE TONE. YOUR TASK IS TO EDIT MY ESSAY BASED ON THE PROMPT 'DESCRIBE THE EVOLUTION OF ARTIFICIAL INTELLIGENCE FROM ALAN TURING TO LARGE LANGUAGE MODELS'. ATTACHED TO THIS PROMPT IS THE ROUGH DRAFT. ADDITIONALLY, I NO LONGER WANT BULLET POINTS THOSE SHOULD BE CONVERTED INTO SENTENCES. MOREOVER, IT IS ONLY 1,335 WORDS AND I NEED IT TO BE 2,500 WORDS SO YOU NEED TO ADD ADDITIONAL INFORMATION INTO SECTIONS SUCH AS INTRODUCING NEW FIGURES OR ELABORATING ON INNOVATIONS. SOME THINGS TO KEEP IN MIND, THE INTRODUCTION SHOULD SIGNPOST FOR THE READER WHAT THEY CAN EXPECT FROM THE MAIN SECTIONS OF THE ESSAY. DESCRIBE THE BENEFITS PEOPLE REALIZED USING AI TOOLS SUCH AS CHATGPT WITH RICH DETAILS THAT ENGAGE THE READER. DO NOT TAKE FOR GRANTED THE READER UNDERSTANDS CONCEPTS; EXPLAIN TECHNOLOGIES WHEN THEY ARE BROUGHT UP FOR THE FIRST TIME ASSUMING THE READER DOES NOT HAVE PRIOR FAMILIARITY WITH IT. DO NOT CUT OFF BEFORE YOU REACH 2,500 WORDS.



# THE FIRST OUTPUT WAS VERY WELL CRAFTED!

THE OUTPUT BLEW ME AWAY. THE QUALITY OF WRITING WAS EXTREMELY GOOD AND IT FLOWED PERFECTLY. ALL I NEEDED TO DO FROM HERE WAS BOOST IT FROM 1,630 WORDS TO 2,500.

AI

computers to engage in strategic decision-making within the confines of a well-defined game. ELIZA, a natural language processing system, used pattern matching and keyword recognition to simulate conversation, albeit in a shallow manner. While these programs hinted at the possibilities, they also revealed the immense complexity of replicating human thought processes.

As researchers delved deeper into the field, they encountered limitations that tempered their initial enthusiasm. The complexity of replicating human cognition proved far greater than anticipated, and the limited computational power of the time further hampered progress. Promises of rapid breakthroughs failed to materialize, leading to a period of disillusionment known as the "AI Winter" in the 1970s and 1980s. Funding for AI research dwindled, and skepticism regarding the true potential of the field became prevalent.

The Shift Towards Practical Applications: Expert Systems and the Rise of Machine Learning (1980s-1990s)

Despite the challenges faced during the AI Winter, researchers persevered, shifting their focus towards practical applications. The 1980s saw the development of expert systems, knowledge-based programs that captured the expertise of human specialists in specific domains. These systems allowed computers to solve problems and offer advice within their areas of specialization.

Still not long enough, we need to reach 2,500 words. That was 1,690 words but it



# 1,630 words +78 words

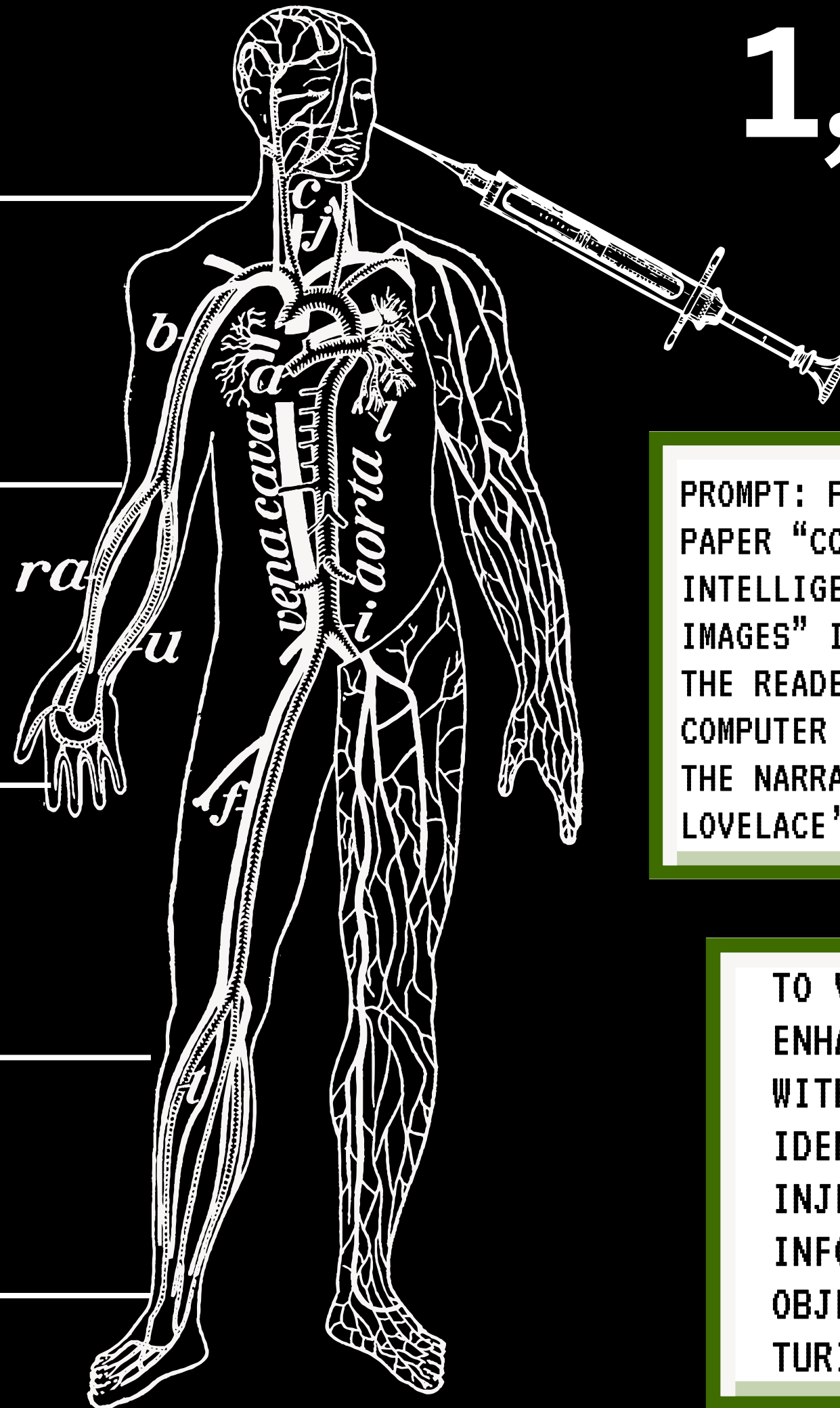
THE SEEDS OF ARTIFICIAL INTELLIGENCE: THE PIONEERING  
WORK OF ALAN TURING (1950S)

THE DAWN OF AI RESEARCH: INITIAL ENTHUSIASM AND THE  
"AI WINTER" (1956-1980S)

THE SHIFT TOWARDS PRACTICAL APPLICATIONS: EXPERT  
SYSTEMS AND THE RISE OF MACHINE LEARNING (1980S-  
1990S)

THE DEEP LEARNING REVOLUTION AND THE ASCENDANCY  
OF NEURAL NETWORKS (2000S-2010S)

THE ERA OF LARGE LANGUAGE MODELS (2010S-PRESENT)



PROMPT: PRIOR TO DISCUSSING ALAN TURING'S  
PAPER "COMPUTING MACHINERY AND  
INTELLIGENCE  
IMAGES" INTRODUCE ADA LOVELACE, EXPLAIN TO  
THE READER WHY SHE IS CONSIDERED THE FIRST  
COMPUTER PROGRAMMER, AND WEAVE HER INTO  
THE NARRATIVE THROUGH MENTIONING LADY  
LOVELACE'S OBJECTION

TO VISUALIZE THE PROCESS OF  
ENHANCING THE ESSAY, IMAGINE A BODY  
WITH VARIOUS SECTIONS HIGHLIGHTED. I  
IDENTIFIED AREAS WHERE I COULD  
INJECT NEW CONTENT, SUCH AS ADDING  
INFORMATION ABOUT LADY LOVELACE'S  
OBJECTION TO THE SECTION ON ALAN  
TURING.



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the human based on their responses, the machine is said to have passed the Turing Test. This concept laid the groundwork for the development of AI and set the stage for the emergence of chatbots and other conversational AI systems.

### Part II: The Emergence of AI Chatbots

In the 1960s, Joseph Weizenbaum, a German-American computer scientist, developed ELIZA, one of the first chatbots. ELIZA was designed to simulate a psychotherapist by using pattern matching and substitution to generate responses based on the user's input. While ELIZA was not truly intelligent, it demonstrated the potential of chatbots as a means of human-computer interaction.

Over the years, AI chatbots continued to evolve, with the development of more advanced systems like PARRY, A.L.I.C.E., and Jabberwacky. These chatbots used more sophisticated natural language processing techniques and were capable of engaging in more complex conversations. However, they were still limited in their ability to understand context and generate coherent responses.

### Part III: The Rise of Large Language Model Chatbots

In recent years, the field of AI has witnessed a major breakthrough in the development of large language models (LLMs). These models are built using deep learning techniques and are trained on massive amounts of text data.

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12.6K posts

ADDITIONALLY, I WAS ABLE TO GO BACK TO MY PREVIOUS ATTEMPTS AND FIND INFORMATION FROM THE GROK OUTPUT THAT WAS NOT INCLUDED IN THE GOOGLE GEMINI OUTPUT AND INJECT MORE WORDS. THROUGH THIS TARGETED APPROACH, I EFFICIENTLY EXPANDED THE ESSAY TO 2,500 WORDS.

WHEN I REACHED 2,500 WORDS, I FELT UNEASY ABOUT ATTACHING MY NAME TO A PIECE OF WRITING THAT FUNDAMENTALLY DID NOT FEEL LIKE MY OWN.

MY UNEASINESS DID NOT STEM FROM GUILT ABOUT NOT HAVING WRITTEN THE SENTENCES MYSELF. ON THE CONTRARY, MY GUILT STEMMED FROM THE FACT THAT THIS PIECE OF WRITING FELL SHORT OF MY STANDARDS.

The AI Journey

Ada Lovelace

Early philosophical inquiries formalization of the field. He Lovelace and Alan Turing, the

Ada Lovelace, an English computer scientist. In the mid-19th century, she designed the Analytical Engine, a precursor to the modern computer. Her work included the first published algorithm of computing machines. Her "Computing Machinery and its Application" laid out a plan to create, foreshadowing the path of modern computing.

A century later, Alan Turing took up the mantle of exploring machine intelligence. He proposed the Turing Test, a thought experiment that proposed a test where a human judge engages in a text-based conversation with a machine. If the judge cannot reliably distinguish the machine from a human based solely on the conversation, the machine is considered intelligent. This benchmark established a crucial goal for AI research, setting the stage for the pursuit of achieving human-like conversation and understanding.

Turing's work extended beyond the Turing Test. He also laid the theoretical foundation for the concept of a universal Turing machine, a hypothetical machine capable of simulating any other computer system. Although not a practical machine itself, this theoretical concept was instrumental in understanding the computational capabilities of machines and paved the way for future advancements in computing.

The Dawn of AI Research: Initial Enthusiasm and the "AI Winter" (1956-1980)

Word Count

Pages	7
Words	2653
Characters	18364
Characters excluding spaces	15766

☐ Display word count while typing

Cancel OK

DESPITE THE PAPER BEING INFORMATIVE, UNDOUBTEDLY A USEFUL RESOURCE THAT COULD BE USED TO EDUCATE PEOPLE ABOUT THE HISTORY OF AI, I DID NOT FEEL AS IF MY VOICE WAS ALIVE IN THIS PIECE OF WRITING.

SO, I STARTED FROM SCRATCH WITH A NEW APPROACH: HUMAN-MACHINE SYMBIOSIS METHOD.



# HUMAN-MACHINE SYMBIOSIS METHOD



USING CHATGPT AS A SOUNDING BOARD, I BRAINSTORMED IDEAS AND GENERATED ROUGH DRAFTS FOR EACH SECTION. I THEN REFINED THE TEXT IN A WORD DOCUMENT AND USED CLAUDE TO POLISH THE WRITING. THIS METICULOUS, SECTION-BY-SECTION APPROACH FELT LIKE PERFORMING A CAREFUL SURGERY, ENSURING THAT MY VOICE AND IDEAS SHONE THROUGH.

THIS WAS MY FINAL, MOST SUCCESSFUL STRATEGY.

- STEP 1: USE **CHATGPT** AS A SOUNDING BOARD FOR BRAINSTORMING AND ROUGH DRAFTS
- STEP 2: REFINE TEXT IN A WORD DOCUMENT
- STEP 3: USE **CLAUDE** TO POLISH THE WRITING
- STEP 4: RETURN POLISHED TEXT TO WORD DOC
- STEP 5: RETURN TO STEP 1

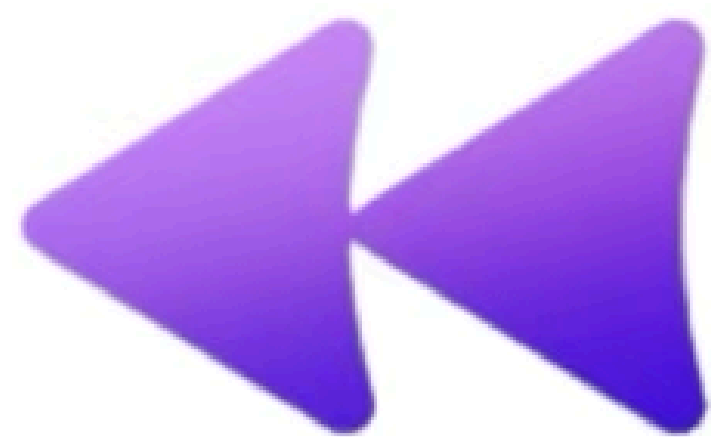
“YOUR PAPERS WERE BETTER THAN WHAT THE AI COULD PRODUCE ALONE, YET THEY WERE (PROBABLY) BETTER THAN WHAT YOU COULD HAVE PRODUCED WITHOUT THE AI.”  
~ WALTER ISAACSON, DURING FINAL LECTURE OF 2024

## MAIN TAKEAWAYS

- USING THE BLACK BOX METHOD MIGHT NOT BE THE BEST WAY TO WRITE AN ESSAY, BUT IT IS EXTREMELY USEFUL FOR LEARNING THE CONTENT.
- DIVIDING YOUR ESSAY INTO CLEAR, CHRONOLOGICAL SECTIONS BEFORE STARTING THE WRITING PROCESS IS USEFUL.

PRO TIP:

USE THE APPLICATION REWIND.AI (THE FREE  
VERSION WORKS PERFECTLY) FOR SCREEN  
RECORDING TO ASSIST WITH THE PROCESS OF  
APPENDIX CREATION.



**Rewind**

**PRO TIP:**

**USE THIS PROMPT TO CREATE YOUR WORKS CITED:**

YOUR TASK IS TO READ MY ESSAY AND EVERY TIME I MAKE A CLAIM THAT WOULD REQUIRE ME TO USE A SOURCE, I WANT YOU TO FIND A SOURCE AND CONVERT IT TO MLA FORMAT AND THEN UNDER THE SOURCE PROVIDE A BULLET POINT SAYING 'THE CLAIM OF \_\_\_ MADE IN SECTION \_\_ IS SUBSTANTIATED BY...' PRODUCE MORE SOURCES THAN YOU BELIEVE ARE NECESSARY



YOU CAN FIND MY ESSAY BY VISITING  
[AIINNOVATORSARCHIVE.COM](https://aiinnovatorsarchive.com) AND SEARCHING  
FOR 'AI VANGUARD' OR 'CONNOR HOGAN'

PERHAPS YOU COULD USE IT AS  
INSPIRATION FOR YOUR NEXT PROJECT!

AI Vanguard by Connor Hogan

