



ChatGPT: Responding to the Challenge and Opportunity



UNIVERSITY OF WYOMING

Overview

- What is ChatGPT?
- How does it work?
- Getting started with ChatGPT
- Examples
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- Case Study: UW's response
- Where does your school and you go from here?
- Questions



What is ChatGPT?

- ChatGPT: Chat Generative Pre-trained Transformer
 - Chat: refers to chatbot front end
 - Generative Pre-training: trained on huge amounts of text
 - Transformer: type of neural network used
- Large Language Model (LLM) Artificial Intelligence (AI) platforms

Sources:

“Disruptive Influence,” PRISM Magazine, American Society for Engineering Education, Summer 2023.

“ChatGPT explained: everything you need to know about the AI chatbot, Mark Wilson, March 15, 2023.



What is ChatGPT?

- Created by San Francisco company OpenAI
- Released free to the public in November 2022
 - Reached 100 million users in two months
- Other recent LLMs
 - Bing search engine and Microsoft Edge
 - Google Bard



How does it work?

- Form of generative AI
- Uses database of massive amounts of text data
 - 570 GB of written internet text including books, articles, websites, and social media
 - Trained on hundreds of billions of words
- Learns textual patterns and relationships
- Predicts next word or phrase in a sentence
- Seems like “a friendly and intelligent robot”



How does it work?

- ChatGPT:
 - provides answers to questions
 - can compose original sentences and essays
 - Examples:
 - Drafting letters, writing poetry, creating fiction,
 - Generating job descriptions, creating meal plans
 - Assist with translation
 - basic computer code



Getting started with ChatGPT

- ChatGPT is available for free from OpenAI
- ChatGPT Plus costs \$20/month
 - Full access to ChatGPT even during peak times
 - Answers arrive three times quicker than free version
- New developments on the way – text and image processing



Getting started with ChatGPT

YouTube

Search



ChatGPT Tutorial - A Crash Course on Chat GPT for Beginners



Adrian Twarog ✓
358K subscribers

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79K



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Thanks



Getting started with ChatGPT

- OpenAI.com
- Establish free account
 - Your e-mail
 - Establish PW
 - Provide phone number for two factor authentication
 - Answer a few questions
 - Go to ChatGPT



+ New chat

Today

Electrodes and Skin I

NEW Share a link to this chat
Learn more

Upgrade to Plus NEW

NEW Share a link to this chat
Learn more

I posted the following:
Describe the biomedical
electrode and skin
interface.

Received the following
response immediately



A biomedical electrode is a device used to establish a connection between the human body and an electronic system for the purpose of measuring physiological signals or delivering electrical stimulation. These electrodes are commonly used in various medical applications such as electrocardiography (ECG), electromyography (EMG), electroencephalography (EEG), and transcutaneous electrical nerve stimulation (TENS).



The skin interface refers to the interaction between the biomedical electrode and the skin. The quality of this interface is crucial for accurate and reliable signal acquisition or stimulation. The skin is a complex structure that consists of several layers, including the epidermis, dermis, and subcutaneous tissue.

To establish a reliable electrical connection, biomedical electrodes are designed to adhere to the skin surface and minimize the impedance at the electrode-skin interface. There are different types of electrodes commonly used, including dry electrodes and wet electrodes.

1. Dry Electrodes: These electrodes do not require any conductive gel or electrolyte for operation. They typically have a solid metal or carbon-based contact surface that directly interfaces with the skin. Dry electrodes are easy to use, convenient, and suitable for long-term monitoring. However, they may have higher skin-electrode impedance and lower signal quality compared to wet electrodes.
2. Wet Electrodes: Wet electrodes require a conductive gel or electrolyte to establish a low-impedance connection with the skin. The conductive gel fills the gaps between the electrode and the skin, reducing the contact impedance and improving signal quality. Wet electrodes are commonly used in clinical settings where high-quality signals are necessary, such as during diagnostic tests or medical procedures.

In both dry and wet electrodes, the design focuses on optimizing the interface with the skin. The electrode's surface area, shape, and material play crucial roles in ensuring good contact and minimizing artifacts or noise in the acquired signals. The electrodes should be biocompatible to prevent skin irritation or adverse reactions. Additionally, they should provide mechanical stability to withstand motion artifacts and remain firmly attached to the skin.

To summarize, the biomedical electrode and skin interface are critical elements in medical applications involving the measurement or stimulation of physiological signals. The electrodes are designed to establish a reliable electrical connection with the skin while minimizing impedance and maximizing signal quality. The choice between dry and wet electrodes depends on the specific requirements of the application, with both types offering their own advantages and considerations.

Regenerate response

Send a message



Where is it helpful? challenged?

ChatGPT



Examples

"Explain quantum computing in simple terms" →

"Got any creative ideas for a 10 year old's birthday?" →

"How do I make an HTTP request in Javascript?" →



Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests



Limitations

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

ChatGPT Feb 13 Version. Free Research Preview. Our goal is to make AI systems more natural and safe to interact with. Your feedback will help us improve.

MacBook Pro

Source: Open AI



Opinions vary

“Disruptive Influence,” PRISM Magazine, American Society for Engineering Education, Summer 2023.

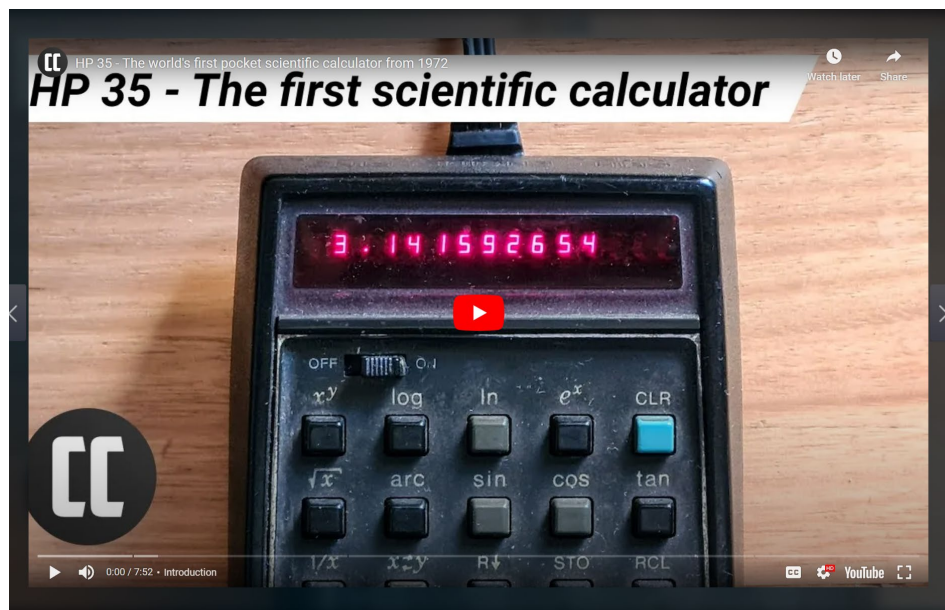
- “Generative AI tools can either help or harm higher education, depending on who you ask.”
- “Ultimately, when used with clear guidelines, generative AI can legitimately help engineering students improve their productivity.”
- “You can’t ignore that it exists and not prepare your students for a future that will be highly ingrained with AI.”



Opinions vary

“Disruptive Influence,” PRISM Magazine, American Society for Engineering Education, Summer 2023.

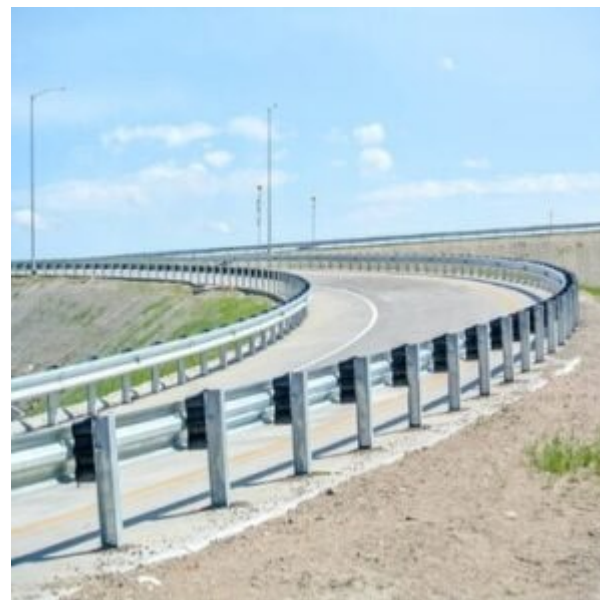
- “Chatbots are the latest in a long line of disruptive technologies that engineering schools have learned to make peace with. An early example cited by educators is the calculator.”



Opinions vary

“Disruptive Influence,” PRISM Magazine, American Society for Engineering Education, Summer 2023.

- “Most professors interviewed favor letting students use the technology within specified guardrails, while standing ready to deal firmly with any misconduct.”



source: safetyoutfit.com



Opinions vary

“Disruptive Influence,” PRISM Magazine, American Society for Engineering Education, Summer 2023.

- “The most valuable benefit ChatGPT may offer to engineering students – particularly international students for whom English is a second language – is assistance to improve their writing.”
- “Overall, we need to teach them to learn how to learn new skills and adapt, to be students who are comfortable teaching themselves new skills and who are also fluent in AI.”



Case Study: UW's response

- Under the guidance and request of President Seidel, UW has proactively approached the ChatGPT challenge.
- On January 19th, 2023 President Seidel established the Artificial Intelligence Chatbots Working Group.
- The group was co-chaired by VP Anne Alexander and Faculty Senate Chair, Professor Renee Laegreid.



Case Study: UW's response

- The group developed:
 - Guidance,
 - syllabus templates with sample statements for ChatGPT use within a specific course,
 - regulation changes, and
 - a series of informational videos.



Case Study: UW's response

- The group's recommendations are available for review at:

https://www.uwyo.edu/acadaffairs/announcements/_files/final-report-aigw-2023.pdf



Case Study: UW's response

Sample syllabus statements on using AI Technology

- **AI Technology:** We recommend that faculty include a section focused on permitted/unpermitted AI technology use in each of their syllabi, generally in the location of their Student Academic Dishonesty statement. Additionally, it is important that faculty clearly communicate their expectations of course collaboration policies (with other students) in this same area.
- We offer the following language as draft material (adapted from University of Delaware) that instructors may want to consider. Additional samples, specific to individual disciplines/contexts, are available here:
https://docs.google.com/document/d/1RMVwzjc1o0Mi8Blw_-JUTcXv02b2WRH86vw7mi16W3U/edit



Case Study: UW's response

Sample syllabus statements on using AI Technology

Option 1: Use prohibited

- *Students are not permitted to use advanced automated artificial intelligence or machine learning tools on assignments in this course. Each student is expected to complete each assignment without substantive assistance from others, including automated tools.*

Option 2: Use only with prior permission

- *Students are permitted to use advanced automated artificial intelligence or machine learning tools on assignments in this course if instructor permission is obtained in advance. Unless given permission to use those tools, each student is expected to complete each assignment without substantive assistance from others, including automated tools.*



Case Study: UW's response

Sample syllabus statements on using AI Technology

Option 3: Use only with acknowledgement

- *Students are permitted to use advanced automated artificial intelligence or machine learning tools on assignments in this course if that use is properly documented and credited. For example, text generated using ChatGPT-3 should include a citation such as: "Chat-GPT-3. (YYYY, Month DD of query). "Text of your query." Generated using OpenAI. <https://chat.openai.com/>" Material generated using other tools should follow a similar citation convention.*

Option 4: Use is freely permitted with no acknowledgement

- *Students are permitted to use advanced automated artificial intelligence or machine learning tools on assignments in this course; no special documentation or citation is required.*



Case Study: UW's response

- In early April, the UW Faculty Senate approved a resolution to address the unauthorized use of ChatGPT and similar products in UW Regulation 2-114 Student Academic Dishonesty.
- The regulation change is going through the approval process.



Case Study: UW's response

- UW Director of Communication Across the Curriculum, Dr. Rick Fisher, developed series of workshops and informational videos on ChatGPT.
- He will be hosting some workshops on adapting courses to ChatGPT in the Fall.
- Video links to the videos:
- “Adapting to ChatGPT: Demo and Tips” -
<https://app.vidgrid.com/view/Llmy4HUOwN5A/?sr=vibe0b>
- “Adapting to ChatGPT: A Framework” -
<https://app.vidgrid.com/view/MeBJwNXO4nBS/?sr=r1OzhH>



Where does your school and you go from here?

- Despite instructors' worries, only 3% of institutions have developed a formal policy regarding the use of AI tools.
- Most (58%) intend to create one "soon." However, what "soon" looks like on a timetable isn't clear.
- But data shows that policy won't be enough; more than half of students (51%) say they "will continue to use generative AI tools even if their instructors or institutions prohibit it."
- "Students are less likely to abide by AI rules when a faculty member cannot—or does not—articulate the power of these technologies to do many of the tasks set in the course," said Dr. Andy Pennock, co-chair of the University of Virginia's Generative AI Teaching and Learning Taskforce, according to the report.

Source: UB University Business, "Despite concerns, only 3% of colleges have developed student policy on AI" Alcino Donadel, June 27, 2023.



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Where does your school and you go from here?

- Considerable personal guidance available:
 - “Four Steps to Help You Plan for ChatGPT in Your Classroom,” Flower Darby, The Chronicle of Higher Education, June 27, 2023,
<https://www.chronicle.com/article/4-steps-to-help-you-plan-for-chatgpt-in-your-classroom>
 - “Classroom Policies for AI Generative Tools,”
https://docs.google.com/document/d/1RMVwzjc1o0Mi8Blw_JUTcXv02b2WRH86vw7mi16W3U/edit



Where does your school and you go from here?

- Considerable institutional guidance available:
 - “ChatGPT and Artificial Intelligence in Higher Education – Quick Start Guide,” UNESCO, Education 2030.

https://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial-Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdf



Summary and Conclusions

- Generative AI products will continue to evolve.
 - GPT-4 released in March 2023
 - Works with text and photos
 - Improved code creation capability
 - Provide more precise responses
- Provide:
 - Guidance,
 - syllabus templates with sample statements for ChatGPT use within a specific course,
 - regulation changes, and
 - informational instruction.

source: “5 jaw-dropping things GPT-4 can do that ChatGPT couldn’t,” CNN Business, Samantha Murphy, March 16, 2023.





Questions?



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