# Responding to the Rise of Generative AI Tools
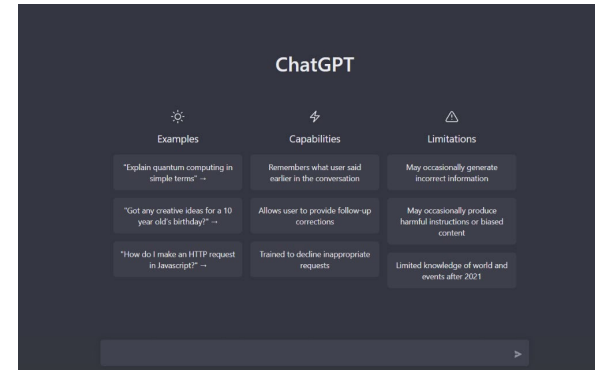
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# Presentation Overview

- Overview of Generative AI

- What Writing Can Generative AI Currently Do?

- Qualities of Text Written by Generative AI

- Coming Soon: New Powers

- Responses to Generative AI in the Classroom

- Discussion

# What is Generative AI?

- Uses a subtype of machine learning called large language models (LLM)
- Trained on petabytes of text data to predict associations of words
- This allows them to read, summarize, translate, and create texts as well as pictures, write code, and more
- Examples: ChatGPT (OpenAI), Bard (Google), Claude (Anthropic)
- Specially trained models: Bing Chat, Copy.ai, Jasper, Elicit, others

| Simulated exams | GPT-4<br>estimated percentile | GPT-4 (no vision)<br>estimated percentile | GPT-3.5<br>estimated percentile |
|---|---|---|---|
| Uniform Bar Exam (MBE+MEE+MPT)[1] | 298/400<br>~90th | 298/400<br>~90th | 213/400<br>~10th |
| LSAT | 163<br>~88th | 161<br>~83rd | 149<br>~40th |
| SAT Evidence-Based Reading & Writing | 710/800<br>~93rd | 710/800<br>~93rd | 670/800<br>~87th |
| SAT Math | 700/800<br>~89th | 690/800<br>~89th | 590/800<br>~70th |
| Graduate Record Examination (GRE) Quantitative | 163/170<br>~80th | 157/170<br>~62nd | 147/170<br>~25th |
| Graduate Record Examination (GRE) Verbal | 169/170<br>~99th | 165/170<br>~96th | 154/170<br>~63rd |
| Graduate Record Examination (GRE) Writing | 4/6<br>~54th | 4/6<br>~54th | 4/6<br>~54th |
| USABO Semifinal Exam 2020 | 87/150<br>99th–100th | 87/150<br>99th–100th | 43/150<br>31st–33rd |
| USNCO Local Section Exam 2022 | 36/60 | 38/60 | 24/60 |
| Medical Knowledge Self-Assessment Program | 75% | 75% | 53% |
| Codeforces Rating | 392<br>below 5th | 392<br>below 5th | 260<br>below 5th |
| AP Art History | 5<br>86th–100th | 5<br>86th–100th | 5<br>86th–100th |
| AP Biology | 5<br>85th–100th | 5<br>85th–100th | 4<br>62nd–85th |
| AP Calculus BC | 4<br>43rd–59th | 4<br>43rd–59th | 1<br>0th–7th |
| AP Chemistry | 4<br>71st–88th | 4<br>71st–88th | 2<br>22nd–46th |
| AP English Language and Composition | 2<br>14th–44th | 2<br>14th–44th | 2<br>14th–44th |
| AP English Literature and Composition | 2<br>8th–22nd | 2<br>8th–22nd | 2<br>8th–22nd |

# What Writing Can Generative AI Currently Do?

- Summarize texts

- Write outlines

- Create personal responses

- Write short essays

- Write poetry and short stories

- Write in different voices

- Revise and create multiple versions

- Answer exam questions

# Qualities of Text Written by Generative AI

- Excellent grammar
- Creates structures that are basic but have logical organization
- Tends to produce formulaic, bland content; may lack specifics
- Can sound authoritative while giving incorrect information; "hallucinates"
- Often makes up plausible sounding but nonexistent sources
- Will not be detected by conventional plagiarism checkers

# Analogies for Generative AI

- Autocomplete

- Calculator

- Co-Worker
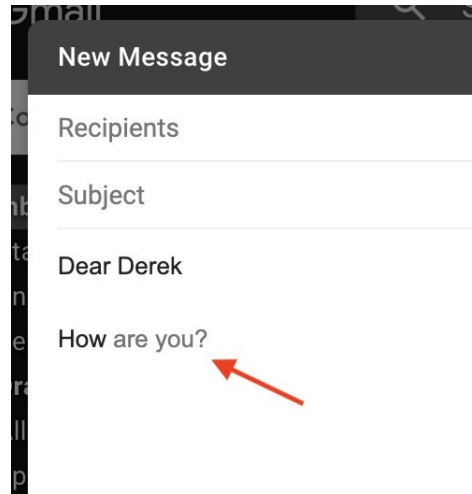
# Other Considerations

- Bias

- Different Levels of Cultural Capital and Familiarity with Technology

- Access/Cost

- Accessibility

# Coming Soon

- Integration in word processing programs

- Better use of sources

- Integration with Internet

- More fine-tuned models for custom tasks

# Responses to Generative AI in the Classroom

1. Forbid It

2. Work Around It

3. Allow It

4. Teach It

# 1. Forbid It

- Pros
  - Encourages students to do their own thinking
  - Possible stopgap measure before revising course materials in future
- Cons
  - Hard to enforce
    - AI detection is being developed but is not reliable (and never will be?)
    - Use of AI generally can't be proven
  - Unclear lines
    - Is Grammarly allowed? Can students use AI for brainstorming? Getting feedback from AI?
  - Suggestions like handwritten essays aren't realistic and equitable in most situations

# 2. Work Around It

- ## Pros
  - Encourages students to learn concepts and essential skills for themselves
  - May only require small changes to existing assignments
- ## Cons
  - May not be a long-term solution as AI gets more advanced
  - Depending on approach, may require more time to review assignments
  - Won't work in some situations

# 2. Work Around It: Examples

- Ask the students to include and engage with details from texts that have not been pervasively written on or cannot be accessed by AI
  - Obscure texts, texts behind paywalls, video, audio, class lectures
- Incorporate current events in assignments
- For reading responses, use social annotation rather than open ended questions
- Ask students to submit an audio file, podcast, video, drawing, diagram, or multimedia project.

# 3. Allow It

- Pros:
  - Reflects writing process outside of classroom
  - Requires less modification of assignments by instructor
- Cons
  - Students may not learn key conecpts if they rely on AI tools
  - Inequities between students using AI tools and those not using them

# 3. Allow It: Examples

- Scaffolding and Reflection
  - Assign steps in the writing process and/or post-assignment reflection and require reflection at each step (brainstorming, outlining, drafting)
- Require students to identify parts of the assignment created by generative AI

# 4. Teach It

- Pros
  - Students are going to use AI tools so AI literacy is valuable
  - Allows students to see AI's strengths and weaknesses
  - Centers critical thinking

- Cons
  - Rapid development of AI tools makes planning hard
  - Most of us are still learning about generative AI
  - May not align with course objectives or it may be another thing to fit in

# Teach It: Examples

- Ask students to evaluate a response or essay produced by ChatGPT
  - Ask ChatGPT to define "social stratification" then consider what is emphasized, left out, etc.
  - Have students use Track Changes in Word to add depth, clarify misinformation, offer alternative perspectives, and make other improvements to ChatGPT output.
  - Have Chat GPT generate two outputs to the same prompt and have students compare them
- Have students ask ChatGPT for feedback on a draft of their assignment; students evaluate the feedback given
- Explore how the specific language in prompts produces different results

# Final Thoughts

- Familiarize yourself with tools like ChatGPT. Try entering your assignment prompts and evaluate the output.
- Go back to you course learning objectives to consider them with generative AI in mind.
- Think about both short-term and long-term approaches.
- Whatever approach you take, include a clear policy statement in your syllabus and discuss expectations with your students