Let’s explore and have some fun while we wait!

Google Arts & Culture
AI Image Game
NGSS-ESS Webinar: Geoscience teaching & learning in the time of AI

November 2, 2023
1:00 PM Pacific | 2:00 PM Mountain | 3:00 PM Central | 4:00 PM Eastern
NGSS-ESS Webinar:
Geoscience teaching & learning in the time of AI

Organizers:
Aida Awad, NAGT Past President / Secretary/Treasurer
Lauren Brase, American Geosciences Institute (AGI)
Missy Holzer, National Earth Science Teachers Assoc (NESTA)
Holly Kelchner, SERC/NAGT
Webinar overview:

➢ Welcome and introductions - today’s presenters
  ○ Missy Holzer, NESTA
  ○ Lauren Brase, AGI
  ○ Aida Awad, NAGT

➢ Please join us in the spreadsheet for comments and back-channel chat

➢ Drop questions into the chat box in Zoom

➢ Post webinar survey: https://nagt.org/282204
Announcements:

➢ Upcoming webinars:
  ○ April 11, 4 p.m. ET
    ■ IODP / AGI

➢ The entire webinar archive is available on the AGI YouTube Channel as a playlist!
Please feel free to type your questions into the chat box during the webinar. Use the spreadsheet for comments and backchannel chat.

Today’s webinar:
Geoscience teaching & learning in the time of AI
Geoscience teaching & learning in the time of AI
Please tell us

We bet you’ve used AI in education or for other purposes. What did you use it for?
Today’s webinar:

- What are LLMs?
- Let’s crowdsource! Why use LLMs?
- Hands-on with classroom AI tools
- AI in education resources
- Debrief & next steps
Getting started with LLMs: a bit of vocabulary to get us started

AI - Artificial Intelligence - A general term covering a range of smart technologies
Getting started with LLMs: a bit of vocabulary to get us started

AGI - Artificial General Intelligence - AGI refers to the development of machines with human-like cognitive abilities across various domains.
Getting started with LLMs: a bit of vocabulary to get us started

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LLM - Large Language Model - Deep learning behemoth, trained on colossal data, deciphers language like a chameleon, writes, translates, codes, thinks like a fuzzy human. (Gemini’s humor!) Generating “stuff” that mimics human thought patterns.
Getting started with LLMs: a bit of vocabulary to get us started

Prompt engineering - Prompt engineering involves crafting specific instructions to guide the behavior of language models and improve their performance in desired tasks.
An idea to consider - LLMs are machine learning tools that educators need to carefully consider the use of. They aren’t AI in the true sense of the term, not yet. (Dr. Lee Cronin, University of Glasgow)
When did you first hear about ChatGPT or other LLMs?
Crowdsourcing!
Rationale for integrating LLMs in the geoscience classroom:

Gerd Leonhard, Futurist and Author - "In the future, the most valuable employees will be those who can think critically, solve problems creatively, and collaborate effectively. These are all skills that can be enhanced by using AI tools like LLMs."

For the yellow highlighted sentence to happen, what could be done in your classroom - by you?
Crowdsourcing!

Rationale for integrating LLMs in the geoscience classroom:

Fei-Fei Li, Co-Director of the Stanford Human-Centered AI Institute - "AI can personalize learning in a way that no human can ever dream of. It can create a unique learning experience for every single student, and it can adapt to their individual needs and their pace."

Please respond from the student POV
Transition to breakout rooms
What are you teaching next?

For you | Write more | Reading comprehension | Vocabulary & grammar | Students receive AI Feedback | WOW | Daily routines | Full lessons | Brain breaks | Curify

AGI American Geosciences Institute
National Association of Geoscience Teachers
Action item:
What’s on your to-do list for AI integration?
Crowdsourced AI in geoed resources:


This toolkit was created by Kim (Smith) Brown in collaboration with Jennifer Costello. It is a living document and will be updated on a regular basis. The sheet was originally created as a way to have resource links all in one place for a PD session attended by a group of K-12 educators who had minimal experience using AI tools. We hope that this will be come a crowdsourced AI toolkit for librarians, coaches, trainers, and anyone else who is doing PD sessions on AI in Education. Please ask for editing access if you are interested in adding to our bank of resources.

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Certificate of webinar participation is only available after completing the post-webinar survey.

Post webinar survey: https://nagt.org/282204
Does your organization offer professional development for K-12 teachers?

Listing in NAGT K12 Resources!
Welcome to the NAGT webinar series

*Improving Earth education one hour at a time*

NAGT sponsors a comprehensive webinar series that is sure to be your one-stop-shop for strengthening work in Earth education. Webinars feature novel and innovative work in Earth education research and pedagogy, new teaching materials, and classroom and professional experiences of people like you. The NAGT webinar series is free and we encourage you to invite your colleagues to attend and join the discussion.

See the full schedule and archives at the NAGT Webinar Series Homepage

http://nagt.org/190616

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Sponsoring Projects and Programs
NESTA, a K-12 focused organization which provides a monthly ENews, a quarterly Journal - *The Earth Scientist*, and an active social media and conference presence to share a variety of timely resources for teachers, many of which are in partnership with other organizations.

[https://nestanet.org](https://nestanet.org)
AGI's Mission: The American Geosciences Institute represents and serves the geoscience community by providing collaborative leadership and information to connect Earth, science, and people.

AGI's Vision: A world that understands and trusts the role of the geosciences in fostering creative solutions for the Earth and humanity.

https://www.americangeosciences.org
Thank you for participating!

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Getting started with LLMs:

A bit of vocabulary to get us started

- **AI - Artificial Intelligence** - AI is a general term covering a range of smart technologies.

- **AGI - Artificial General Intelligence** - AGI refers to the development of machines with human-like cognitive abilities across various domains.


- **LLMs - Large Language Model** - Deep learning behemoth, trained on colossal data, deciphers language like a chameleon, writes, translates, codes, thinks like a fuzzy human. (Bard’s humor!) Generating “stuff” that mimics human thought patterns.

- **Prompt engineering** - Prompt engineering involves crafting specific instructions to guide the behavior of language models and improve their performance in desired tasks.