

AI-Powered Pedagogy

Exploring Best Practices for Integrating AI in Teaching and Research

condor.depaul.edu/jmoore/tech/ai/

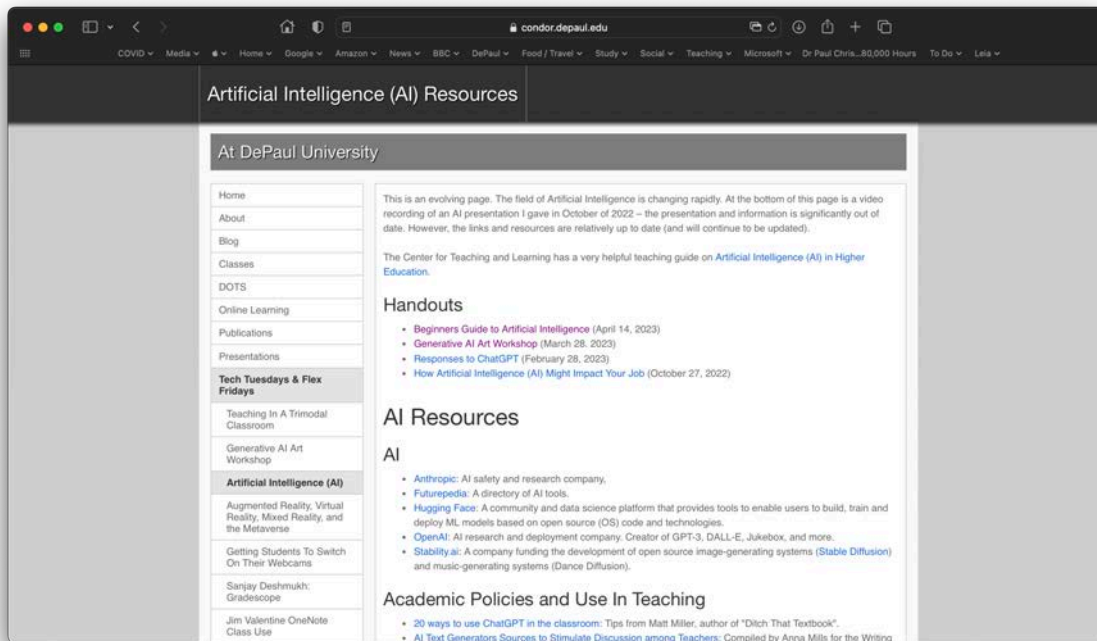
Hello
my name is

JAMES MOORE

Telephone: +1 (312) 362-5870

Email: jmoore@depaul.edu

URL: condor.depaul.edu/jmoore/



condor.depaul.edu/jmoore/tech/ai/

Analogy Of The Iceberg



1:00 PM- 1:45 PM | James Moore

AI-Powered Pedagogy: Exploring Best Practices for Integrating AI in Teaching and Research

[Zoom Link](#)

This workshop will provide university professors with an overview of AI and its potential applications in teaching and research. We will discuss best practices for effectively integrating AI tools in the classroom and in research practices, including how AI can be used to personalize learning experiences for students and how it can be used to analyze large datasets for research. The session will be interactive, with opportunities for group discussions and Q&A to address any concerns or questions about the use of AI in higher education. By the end of the workshop, attendees will have a better understanding of how AI can be used to enhance teaching and research practices, and be equipped with practical knowledge to implement AI in their own classrooms and research endeavors.

Conference Format

For 2023 we are seeking 10 - 20 minute presentations on teaching and learning best practices followed by approximately 30 minutes of breakout discussion facilitation.


Proposal Questions

The image shows a browser window displaying a PDF document from Google Drive. The document is titled "ticon21-proposal-preview.pdf" and is from DePaul University. The main heading is "Teaching and Learning Conference Proposal Submission". Below this, there is a section for "Session Title:" followed by a large empty text box. A paragraph of instructions follows: "Please provide a brief description of the session you are proposing. The description will be included in the conference program, so please limit this description to 200 words or less." Below this text is another large empty text box. At the bottom of the page, there is a footer that reads "Page 1 / 1" with navigation icons for back, search, and forward.

drive.google.com

COVID Media Home Google Amazon News BBC DePaul Food / Travel Study Social Teaching Microsoft Dr Paul Chris...80,000 Hours To Do Leia

ticon21-proposal-preview.pdf Open with Google Docs

 **DEPAUL UNIVERSITY**

Teaching and Learning Conference Proposal Submission

Session Title:

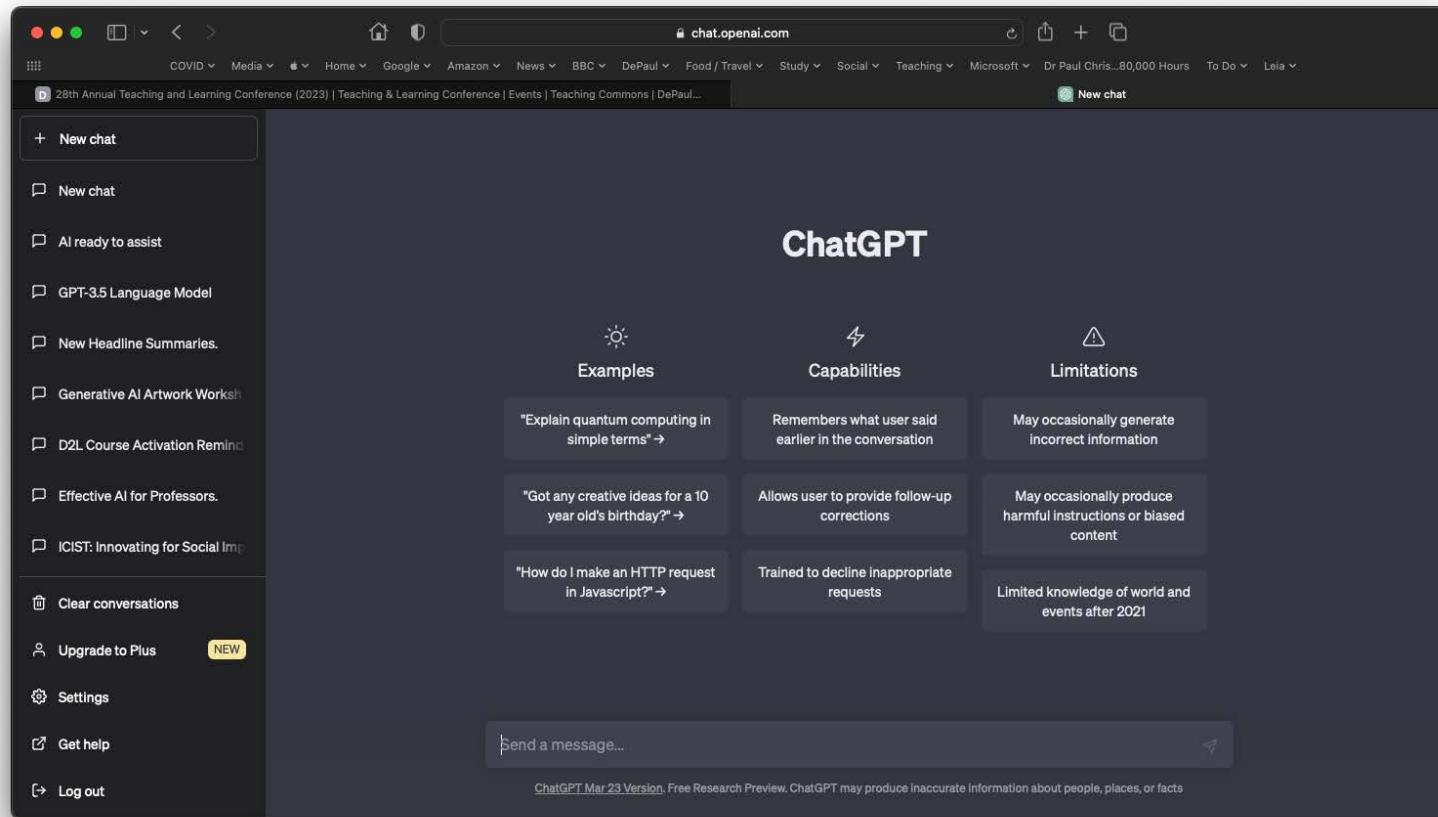
Please provide a brief description of the session you are proposing. The description will be included in the conference program, so please limit this description to 200 words or less.

Page 1 / 1

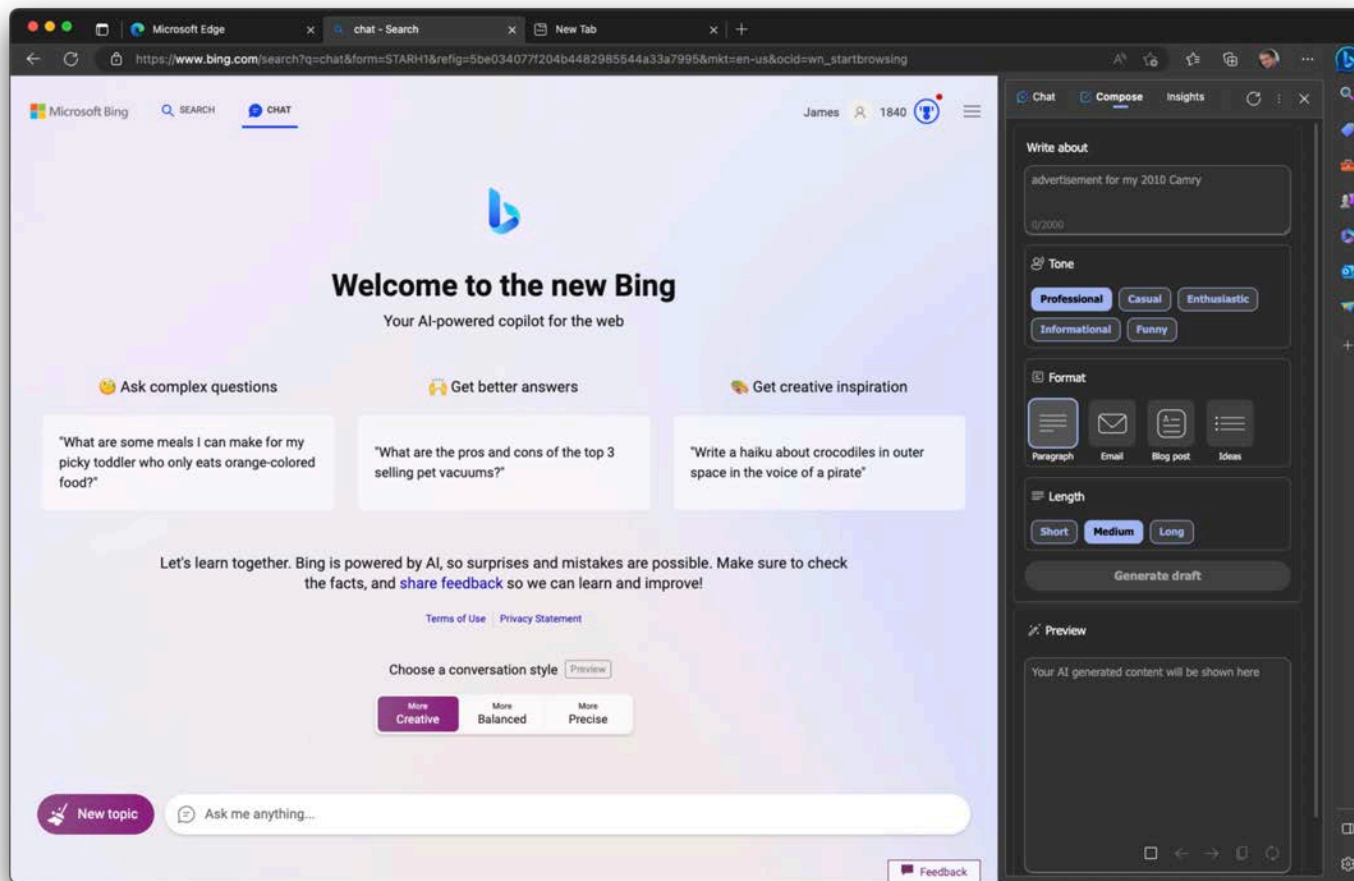
AI Diceman



Option 1: ChatGPT



Option 2: The New Bing





What Bing Answered

1. Please provide a brief description of the session you are proposing. The description will be included in the conference program, so please limit this description to 200 words or less.
2. Please outline the discussion you will facilitate following your presentation. Include the overall topic of your round table discussion, broad topics you will cover, and the sequence in which you will present these topics.
3. Please provide the specific questions you will use to spark and guide conversation about your topic during the discussion.
4. Please list 1-2 expected outcomes for session participants. What will participants be able to do after participating in this session? Example: "By the end of the discussion, participants will be able to identify critical elements of identity that may contribute to students' feelings of inclusion in the classroom."
5. How will you guide participants from various disciplines in thinking about how this topic can be put into practice in their own teaching contexts?
6. Describe the resources/ideas/practices participants will be able to implement in teaching soon after attending your session.



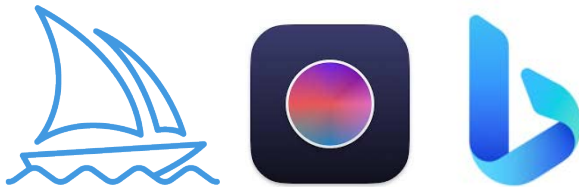
What I Answered

Your Name

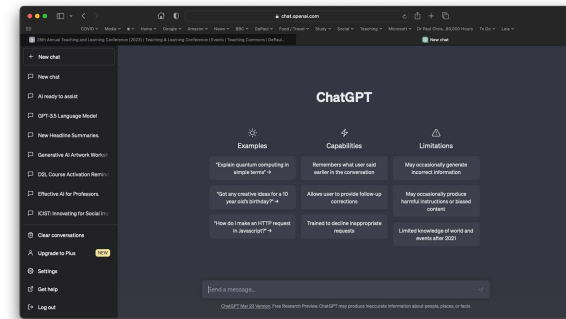
Your Email Address

Will you have Additional Presenters?

Presentation Images



Generative AI



Screengrabs

Please list 1-2 expected outcomes for session participants. What will participants be able to do after participating in this session? Example: "By the end of the discussion, participants will be able to identify critical elements of identity that may contribute to students' feelings of inclusion in the classroom."

1



This workshop will provide university professors with an overview of AI and its potential applications in teaching and research. We will discuss best practices for effectively integrating AI tools in the classroom and in research practices, including how AI can be used to personalize learning experiences for students and how it can be used to analyze large datasets for research. The session will be interactive, with opportunities for group discussions and Q&A to address any concerns or questions about the use of AI in higher education. By the end of the workshop, attendees will have a better understanding of how AI can be used to enhance teaching and research practices, and be equipped with practical knowledge to implement AI in their own classrooms and research endeavors.

Please outline the discussion you will facilitate following your presentation. Include the overall topic of your round table discussion, broad topics you will cover, and the sequence in which you will present these topics.

2



Topic: Integrating AI into Teaching and Research in Higher Education: Opportunities, Challenges, and Best Practices

Broad Topics:

Benefits and drawbacks of using AI in teaching and research

Best practices for integrating AI into teaching and research practices

Ethical and legal considerations when using AI in teaching and research

Preparing students for AI-based learning and research

Professional development and training for faculty

Benefits & drawbacks of using AI in teaching & research:

In this discussion, we will explore the potential benefits and drawbacks of using AI in teaching and research, and how it can enhance or detract from student learning and research outcomes.

Best practices for integrating AI into teaching & research practices:

In this discussion, we will explore the best practices for effectively integrating AI tools into teaching and research practices, including how to identify learning objectives and select appropriate AI tools.

Ethical and legal considerations when using AI in teaching and research:

In this discussion, we will explore the ethical and legal considerations that need to be taken into account when using AI in teaching and research, including issues related to data privacy and algorithmic bias.

Preparing students for AI-based learning and research:

In this discussion, we will explore how to prepare students to work with AI-based tools and technologies, and what impact this might have on their future careers.

Professional development and training for faculty:

In this discussion, we will explore what kind of professional development or training might be necessary for faculty to effectively integrate AI into their teaching and research practices.

Throughout the discussion, we will encourage participants to share their experiences and perspectives on the use of AI in teaching and research in their own disciplines, and how they are addressing the challenges and opportunities associated with AI integration. We will also provide opportunities for group discussions and Q&A to address any concerns or questions about the use of AI in teaching and research, and to help participants connect with others who are interested in integrating AI into their teaching and research practices.

Please provide the specific questions you will use to spark and guide conversation about your topic during the discussion.

3



What are some potential benefits and drawbacks of using AI in teaching and research in higher education?

What are some practical use cases of AI in teaching and research, and how might they benefit students and faculty?

How can ethical and legal considerations be taken into account when integrating AI into teaching and research practices?

How can we ensure that AI is being used in ways that align with the values and goals of higher education?

How can we prepare students to work with AI tools and technologies, and what impact might this have on their future careers?

What kind of professional development or training might be necessary for faculty to effectively integrate AI into their teaching and research practices?

How can we ensure that the use of AI in teaching and research is inclusive and accessible for all students and faculty, regardless of their background or ability?

What are some future directions or possibilities for using AI in teaching and research in higher education, and how might these shape the future of the field?

Please list 1-2 expected outcomes for session participants. What will participants be able to do after participating in this session? Example: "By the end of the discussion, participants will be able to identify critical elements of identity that may contribute to students' feelings of inclusion in the classroom."

4



Participants will be able to identify the benefits and drawbacks of using AI in teaching and research in higher education, and will be equipped with practical knowledge to implement AI in their own classrooms and research endeavors.

Participants will gain a better understanding of how AI can be used to enhance teaching and research practices, and will be able to apply ethical and legal considerations when integrating AI into teaching and research practices.

How will you guide participants from various disciplines in thinking about how this topic can be put into practice in their own teaching contexts?

5



To guide participants from various disciplines in thinking about how to put the topic into practice in their own teaching contexts, I will encourage them to engage in the following activities:

Reflection:

Participants will be encouraged to reflect on their current teaching practices and consider how AI can be integrated to enhance their teaching and research outcomes. They will be asked to identify the learning objectives that they want to achieve and how AI can help them achieve those objectives.

Group Discussions:

Participants will be divided into small groups based on their disciplinary interests and will engage in group discussions about how AI can be integrated into their teaching and research practices. Each group will share ideas and experiences on how AI can be used to achieve specific learning objectives and address discipline-specific challenges.

Case Studies:

I will present case studies that illustrate the successful integration of AI into teaching and research practices across various disciplines. Participants will be encouraged to analyze these case studies and identify the key factors that contributed to their success.

Hands-on Activities:

Participants will engage in hands-on activities that demonstrate the use of AI-based tools and technologies in teaching and research. For example, they may work with chatbots to facilitate online discussions or use machine learning algorithms to analyze data.

Professional Development:

Participants will be introduced to professional development opportunities and resources that can help them gain further knowledge and skills related to the use of AI in teaching and research.

Overall, the goal is to provide participants with a variety of opportunities to engage with the topic, from reflection and discussion to hands-on activities and professional development. By engaging in these activities, participants will be able to see the potential of AI for their own teaching and research practices and gain confidence in their ability to integrate AI into their work.

Describe the resources/ideas/practices participants will be able to implement in teaching soon after attending your session.

6



After attending this session, participants will be able to implement a variety of resources, ideas, and practices to effectively integrate AI into their teaching. Here are a few examples:

Identify specific learning objectives that can be achieved through the use of AI, such as personalization of learning experiences or assessment of student progress, and select appropriate AI tools to achieve those objectives.

Incorporate AI-based tools and technologies into their curriculum to enhance student engagement and learning outcomes. For example, using chatbots to facilitate online discussions or provide personalized feedback to students, or using machine learning algorithms to analyze large datasets for research purposes.

Develop appropriate assessments to evaluate the effectiveness of AI-based tools and technologies in their teaching practices, and use this data to improve the use of AI in future teaching.

Establish ethical and legal considerations when integrating AI into their teaching practices, such as ensuring that data privacy is maintained and addressing issues related to algorithmic bias.

Engage with professional development opportunities to gain further knowledge and skills related to the use of AI in higher education, and connect with other educators and researchers to share best practices and ideas.

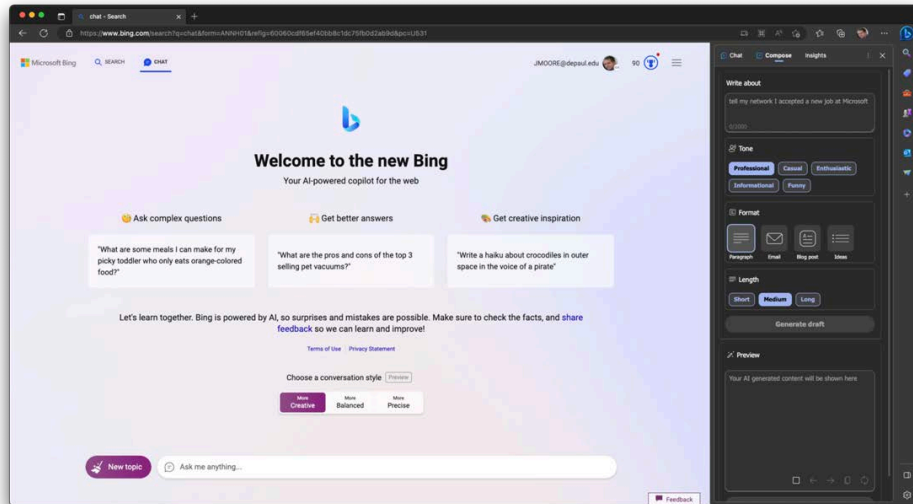
Overall, participants should be able to immediately apply what they have learned in this session to their teaching practices and see improved outcomes for their students.



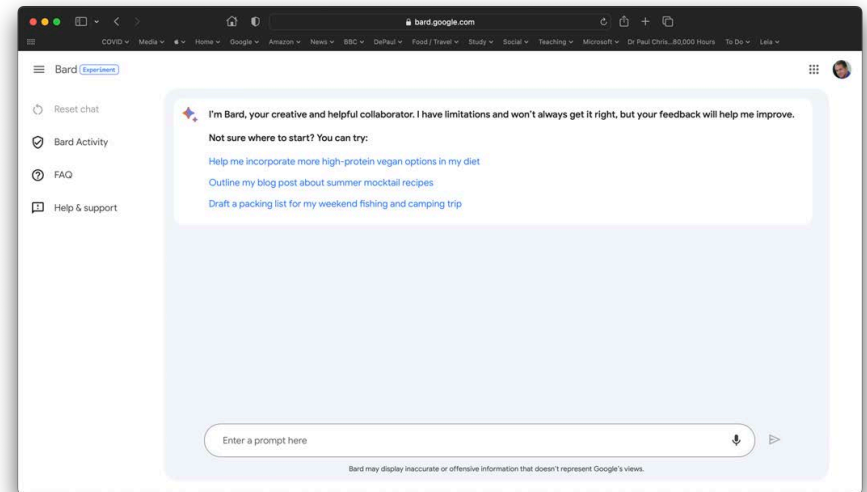
Overpacked

Enough here for a week...

Bing and Bard



www.bing.com



bard.google.com

1: Benefits And Drawbacks

What are the potential benefits and drawbacks of using AI in teaching and research?

How can it enhance or detract from student learning and research outcomes?

Based on web search results, AI in teaching and research has both benefits and drawbacks. Some of the potential benefits are:

AI can provide personalized learning platforms to promote students' learning, automated assessment systems to aid teachers, and facial recognition systems to generate insights about learners' behaviors.

AI can enable personalized learner–instructor interaction at scale and improve the quantity and quality of communication, support, and presence.

AI can monitor and analyze students' progress in real-time and provide feedback and guidance.

AI can detect weaknesses in various spheres of a training course and suggest improvements.



Some of the potential drawbacks are:

AI may pose ethical challenges and dilemmas of using data, algorithms, and machine learning in education, such as privacy, bias, accountability, transparency, and trust.

AI may risk violating social boundaries and raise concerns about responsibility, agency, and surveillance issues when interacting with students and instructors.

AI may lack human empathy, creativity, and critical thinking skills that are essential for learning and teaching.

AI may face technical challenges such as data quality, interoperability, scalability, and security.

AI can enhance or detract from student learning and research outcomes depending on how it is designed, implemented, and evaluated. AI should be used as a tool to augment human intelligence and capabilities, not to replace them. AI should also be aligned with the educational goals, values, and ethics of the stakeholders involved.



Artificial intelligence (AI) has the potential to revolutionize education by providing personalized learning experiences, automating tasks, and providing real-time feedback. However, there are also some potential drawbacks to using AI in education, such as the possibility of bias and the potential for AI to replace teachers.

Potential Benefits of AI in Education

Personalized learning: AI can be used to create personalized learning experiences for each student, based on their individual needs and interests. This can help students to learn more effectively and efficiently.

Automated tasks: AI can be used to automate many of the tasks that teachers currently do, such as grading papers, creating lesson plans, and responding to student questions. This can free up teachers' time so that they can focus on more important tasks, such as providing individual attention to students.

Real-time feedback: AI can be used to provide students with real-time feedback on their work. This can help students to identify and correct their mistakes early on, which can lead to improved learning outcomes.



Potential Drawbacks of AI in Education

Bias: AI systems are trained on data that is collected from the real world. This data can be biased, which can lead to AI systems that are also biased. For example, if an AI system is trained on data that shows that men are more likely to be successful in math than women, the AI system may be more likely to give men higher grades on math tests.

Replacement of teachers: Some people worry that AI will eventually replace teachers. However, it is more likely that AI will supplement the work of teachers, rather than replace them. For example, AI can be used to provide teachers with real-time feedback on their teaching, which can help them to improve their teaching skills.

Overall, AI has the potential to be a powerful tool for improving education. However, it is important to be aware of the potential drawbacks of AI and to take steps to mitigate these risks.



2: Best Practices

What are the best practices for effectively integrating AI tools into teaching and research practices?

Include how to identify learning objectives and select appropriate AI tools.

Based on web search results, some of the best practices for effectively integrating AI tools into teaching and research are:

Partner with a reliable AI provider that can offer technical support, ethical guidance, and educational resources.

Start small and experiment with different AI tools and applications before scaling up.

Foster ethical and critical thinking among students and instructors about the benefits and drawbacks of AI tools.

Design assignments that support students in developing linked thinking and writing skills, and that elicit their own ideas and perspectives.

Provide formative feedback and scaffolding to students using AI tools, and monitor their progress and performance.

Make it clear and explicit that improper or unauthorized use of AI tools in assignments or assessments constitutes academic dishonesty.



To identify learning objectives and select appropriate AI tools, teachers should consider the following questions:

What are the intended learning outcomes of the course or module?

How can AI tools help students achieve these outcomes?

What are the advantages and disadvantages of using AI tools for this purpose?

How will the use of AI tools be aligned with the curriculum, assessment, and pedagogy?

How will the use of AI tools be communicated to students and other stakeholders?



Here are some best practices for effectively integrating AI tools into teaching and research practices:

Identify learning objectives. Before you can select an AI tool, you need to identify your learning objectives. What do you want students to learn? What skills do you want them to develop? Once you know your learning objectives, you can start to look for AI tools that can help you achieve them.

Select appropriate AI tools. There are many different AI tools available, so it's important to select the ones that are right for your needs. Consider the following factors when selecting AI tools:

The learning objectives: Make sure the AI tools you select are aligned with your learning objectives.

The age and level of your students: Some AI tools are designed for specific age groups or levels of students. Make sure you select tools that are appropriate for your students.

The cost of the tools: AI tools can range in price from free to expensive. Make sure you select tools that fit your budget.

Get training on how to use the tools. Once you've selected AI tools, you need to get training on how to use them effectively. This training can come from the tool's developer, a teacher, or a colleague.

Use the tools in conjunction with other teaching methods. AI tools should not be used as a replacement for other teaching methods. Instead, they should be used in conjunction with other methods to create a more comprehensive learning experience.

Monitor student progress and adjust your teaching as needed. As you use AI tools, it's important to monitor student progress and adjust your teaching as needed. This will help you ensure that students are learning effectively and that the AI tools are meeting your needs.



Here are some additional tips for effectively integrating AI tools into teaching and research practices:

Be creative and think outside the box. There are many different ways to use AI tools in the classroom. Don't be afraid to experiment and find new ways to use them.

Collaborate with other teachers and researchers. Sharing ideas and resources with other educators who are using AI tools can help you get the most out of them.

Stay up-to-date on the latest developments in AI. The field of AI is constantly evolving, so it's important to stay up-to-date on the latest developments. This will help you ensure that you're using the most effective tools possible.



3: Ethical And Legal Considerations

What are the ethical and legal considerations that need to be taken into account when using AI in teaching and research?

Include issues related to data privacy and algorithmic bias.

Based on web search results, some of the ethical and legal considerations that need to be taken into account when using AI in teaching and research are:

Data privacy: AI tools often rely on large amounts of data collected from students and instructors, such as personal information, academic records, learning behaviors, and biometric data. This raises concerns about how this data is stored, processed, shared, and protected, and who has access to it. Data privacy laws and regulations vary across countries and regions, and may not be adequate or consistent to address the challenges posed by AI. Therefore, users of AI tools should be informed and consent to the collection and use of their data, and have the right to access, correct, or delete their data



Algorithmic bias: AI tools are often based on algorithms that learn from data and make decisions or recommendations based on that data. However, the data may not be representative, accurate, or complete, and may reflect existing biases or prejudices in society. This can lead to unfair or discriminatory outcomes for certain groups of students or instructors, such as lower grades, fewer opportunities, or reduced access. Algorithmic bias can also affect the quality and validity of research results and conclusions. Therefore, users of AI tools should be aware of the limitations and assumptions of the algorithms, and be able to challenge or appeal their decisions or recommendations



There are a number of ethical and legal considerations that need to be taken into account when using AI in teaching and research. These include:

Data privacy: When using AI tools, it's important to protect the privacy of students' data. This means being clear about how data is collected, used, and shared. It also means getting consent from students before collecting their data.

Algorithmic bias: AI systems are trained on data that is collected from the real world. This data can be biased, which can lead to AI systems that are also biased. For example, if an AI system is trained on data that shows that men are more likely to be successful in math than women, the AI system may be more likely to give men higher grades on math tests.

Student safety: It's important to ensure that AI tools are safe for students to use. This means making sure that the tools are not harmful or offensive. It also means making sure that the tools are not used to discriminate against students.

Intellectual property: When using AI tools, it's important to be aware of intellectual property rights. This means not using AI tools that are copyrighted or patented without permission. It also means being careful not to copy or distribute AI tools without permission.

Transparency: It's important to be transparent about how AI tools are used. This means being clear about how the tools work and how they make decisions. It also means being open to feedback about the tools.

By taking these ethical and legal considerations into account, educators can ensure that AI is used in a responsible and ethical way.



4: Preparing Students

How should a university prepare students to work with AI-based tools and technologies?

What impact might this have on students' future careers?

Based on web search results, a university should prepare students to work with AI-based tools and technologies by:

Providing them with opportunities to learn about the principles, applications, and limitations of AI in various domains and disciplines.

Developing their digital skills, such as data literacy, computational thinking, and programming.

Fostering their critical thinking, problem-solving, and creativity skills, which are essential for working with and alongside AI.

Encouraging them to engage in active and project-based learning, which can help them apply AI tools to real-world challenges and scenarios.

Raising their awareness of the ethical, social, and legal implications of using AI tools, such as data privacy, algorithmic bias, and accountability.



Working with AI-based tools and technologies can have a significant impact on students' future careers. AI can create new jobs and industries that require specialized skills and knowledge. AI can also augment existing jobs and tasks by providing assistance, automation, or optimization. AI can also transform the nature and demand of work by changing the roles, responsibilities, and expectations of workers. Therefore, students need to be prepared to adapt to the changing landscape of work and to leverage the potential of AI for their personal and professional development.



Universities can prepare students to work with AI-based tools and technologies in a number of ways, including:

Offering courses on AI and machine learning. These courses can teach students the basics of AI, including how to design and build AI systems.

Integrating AI into existing courses. This can be done by using AI tools to supplement traditional teaching methods, such as by providing students with personalized feedback or by automating tasks such as grading papers.

Providing students with opportunities to work on AI projects. This can be done by offering internships or research opportunities in AI-related fields.

Encouraging students to participate in AI competitions. This can help students to develop their skills and to learn about the latest developments in AI.

By taking these steps, universities can help students to develop the skills they need to succeed in the AI-driven economy.



The impact of AI on students' future careers is likely to be significant. AI is already being used in a wide range of industries, and it is only going to become more pervasive in the years to come. As a result, students who are able to work with AI will be in high demand.

In addition to the technical skills needed to work with AI, students will also need to develop the following skills:

Critical thinking and problem-solving skills. AI can be a powerful tool, but it is important to remember that it is still a tool. Students need to be able to think critically about the output of AI systems and to identify potential biases.

Communication skills. AI systems are not able to understand human emotions or intentions. As a result, it is important for students to be able to communicate effectively with AI systems and to explain their decisions to humans.

Ethical awareness. AI systems can have a significant impact on society. It is important for students to be aware of the ethical implications of AI and to use AI in a responsible way.

By developing these skills, students can prepare themselves for the AI-driven future.



5: Professional Development And Training

What kind of professional development or training might be necessary for faculty to effectively integrate AI into their teaching and research practices?

Based on web search results, some of the professional development or training that might be necessary for faculty to effectively integrate AI into their teaching and research practices are:

Learning about the principles, applications, and limitations of AI in various domains and disciplines.

Developing their digital skills, such as data literacy, computational thinking, and programming.

Enhancing their pedagogical skills, such as designing AI-based learning activities, assessments, and feedback.

Acquiring ethical knowledge and skills, such as assessing AI-based decisions and addressing ethical issues related to data privacy, algorithmic bias, and accountability.

Engaging in collaborative and reflective practices, such as sharing experiences, challenges, and best practices with other faculty members.



There are a number of different types of professional development or training that might be necessary for faculty to effectively integrate AI into their teaching and research practices. These include:

Introductory courses on AI and machine learning. These courses can provide faculty with a basic understanding of AI concepts and technologies.

Workshops on how to use AI tools in teaching and research. These workshops can give faculty hands-on experience with using AI tools in their classrooms and research labs.

Mentorship programs that pair faculty with experts in AI. These programs can provide faculty with one-on-one support as they integrate AI into their teaching and research practices.

Conferences and workshops that focus on the intersection of AI and education. These events can provide faculty with opportunities to learn about the latest developments in AI and to network with other educators who are using AI in their teaching.

By taking advantage of these professional development opportunities, faculty can develop the skills and knowledge they need to effectively integrate AI into their teaching and research practices.



Here are some additional tips for faculty who are interested in integrating AI into their teaching and research:

Start small. Don't try to do too much too soon. Start by integrating AI into one or two courses or research projects.

Be creative. There are many different ways to use AI in teaching and research. Don't be afraid to experiment and find new ways to use AI.

Collaborate with others. There are many other educators who are interested in integrating AI into their teaching and research. Collaborating with others can help you to learn from each other and to get support.

Stay up-to-date on the latest developments. The field of AI is constantly evolving. Stay up-to-date on the latest developments so that you can use the most effective tools possible.



The Presentation!



Questions To Spark Discussion



1. What are some potential benefits and drawbacks of using AI in teaching and research in higher education?
2. What are some practical use cases of AI in teaching and research, and how might they benefit students and faculty?
3. How can ethical and legal considerations be taken into account when integrating AI into teaching and research practices?
4. How can we ensure that AI is being used in ways that align with the values and goals of higher education?
5. How can we prepare students to work with AI tools and technologies, and what impact might this have on their future careers?
6. What kind of professional development or training might be necessary for faculty to effectively integrate AI into their teaching and research practices?
7. How can we ensure that the use of AI in teaching and research is inclusive and accessible for all students and faculty, regardless of their background or ability?
8. What are some future directions or possibilities for using AI in teaching and research in higher education, and how might these shape the future of the field?

A shiny, metallic robot with a glowing orange light in its head, standing in a futuristic blue environment with glowing screens and panels. The robot is positioned on the left side of the frame, with its right arm extended towards the center. The background is a blurred blue and white, suggesting a high-tech setting.

Activities

Reflection

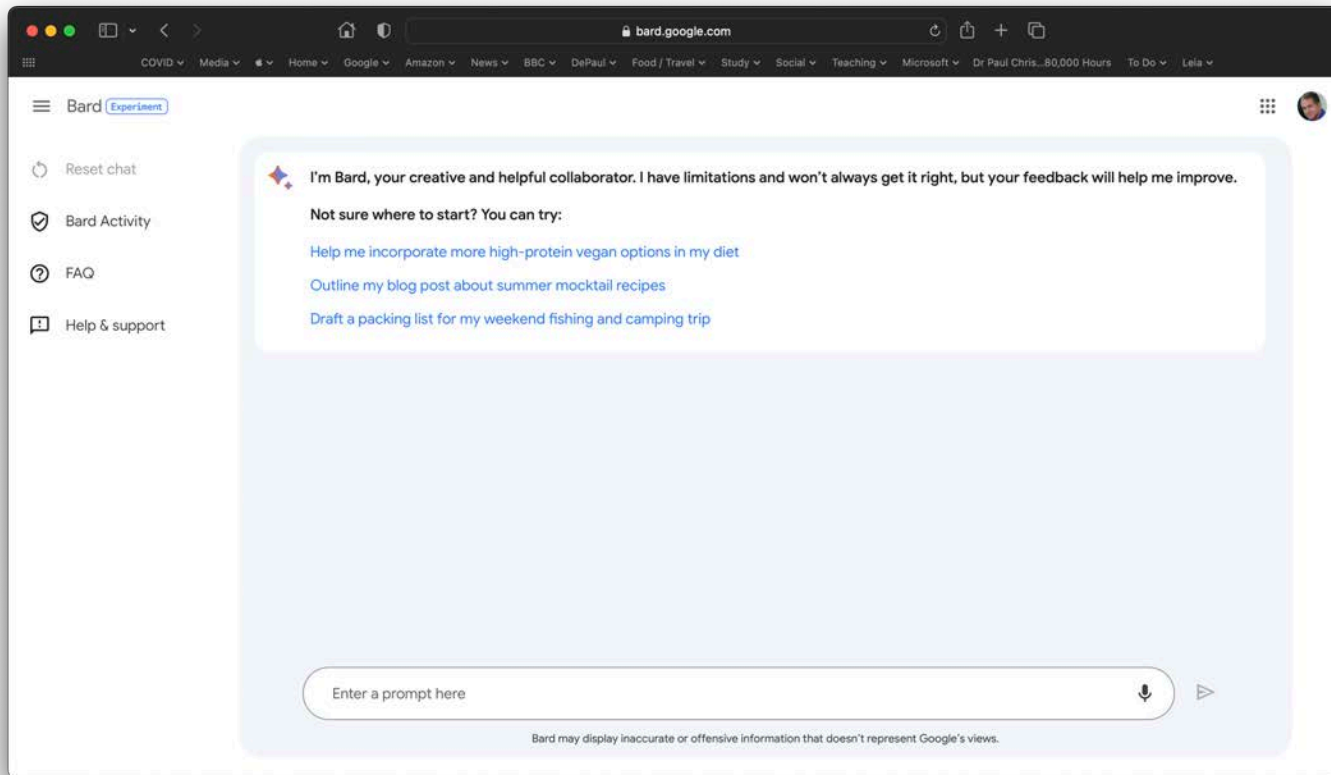
Group Discussions

Case Studies

Hands-on Activities

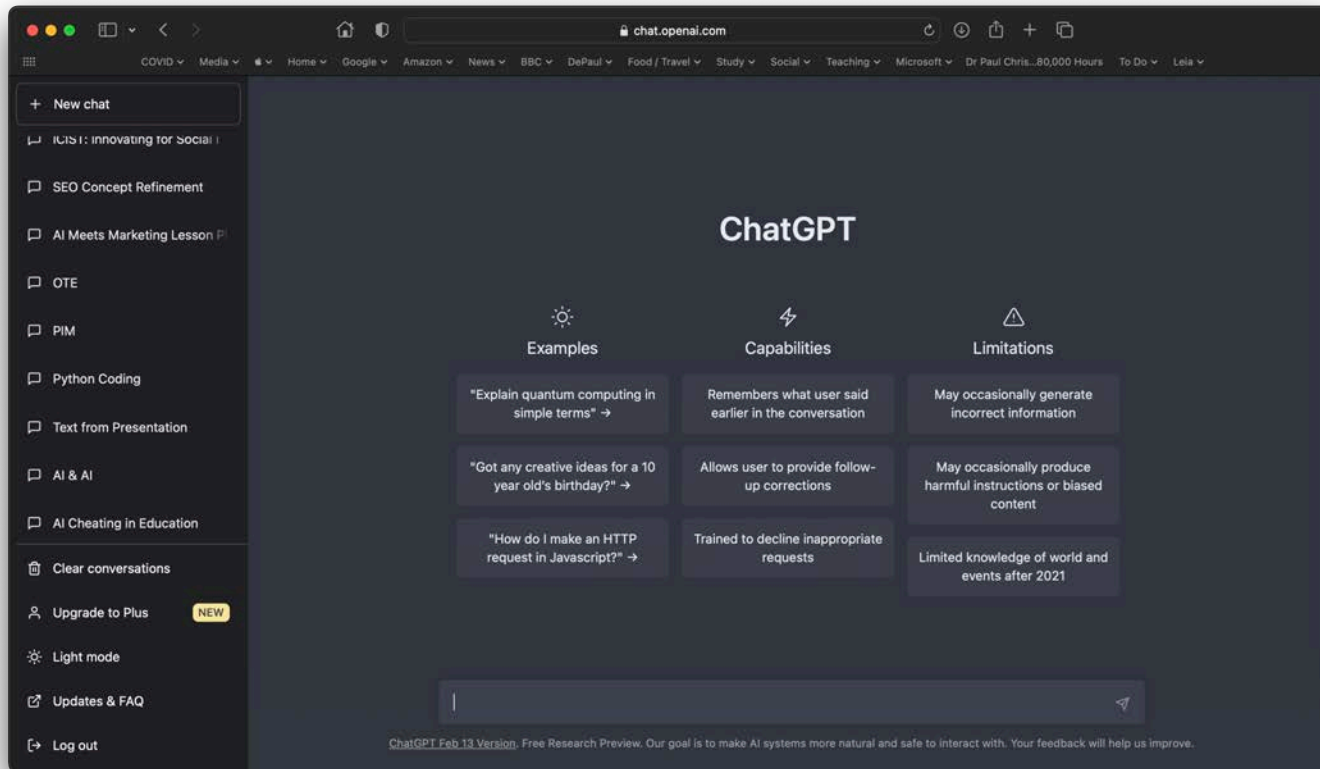
Professional Development

Google Bard



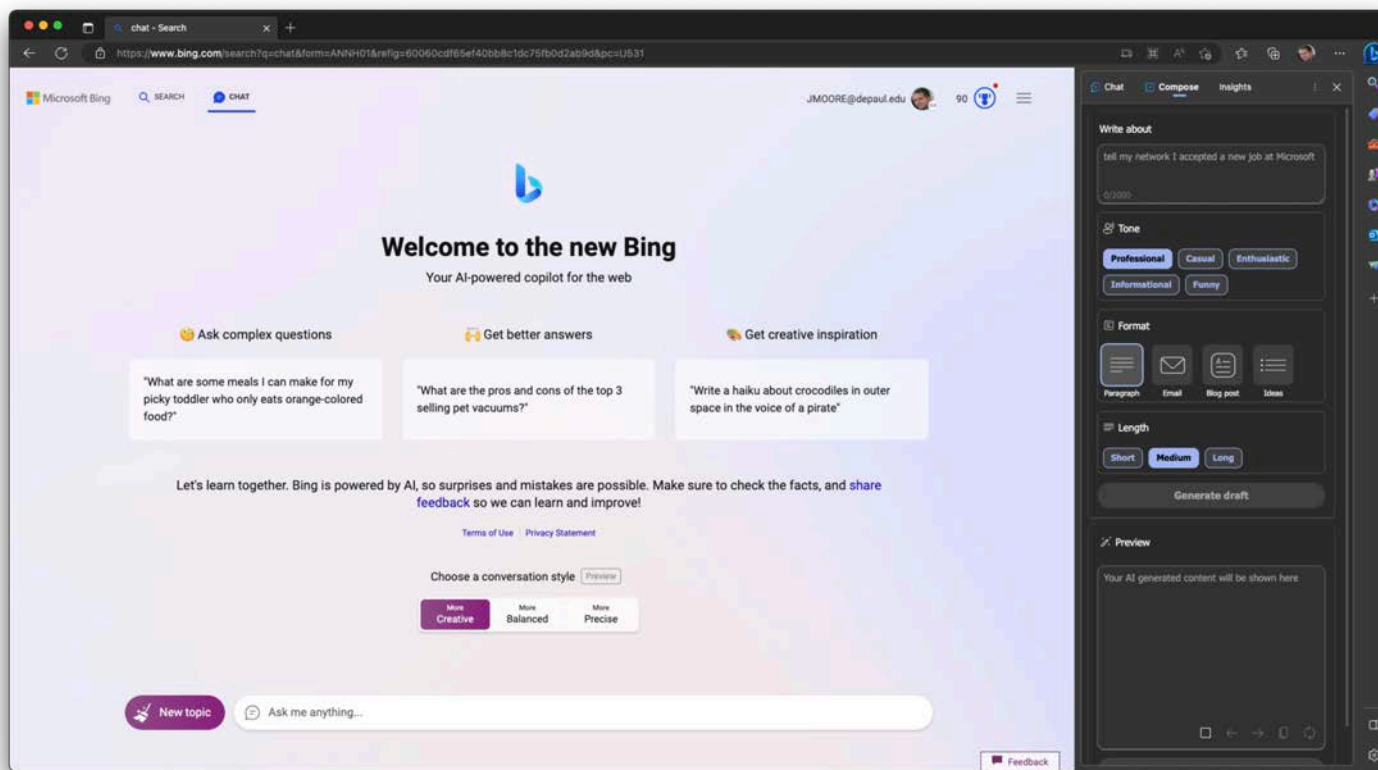
bard.google.com

ChatGPT



chat.openai.com/chat

The New Bing



www.bing.com

Generative AI Art



DALL·E 2



Midjourney

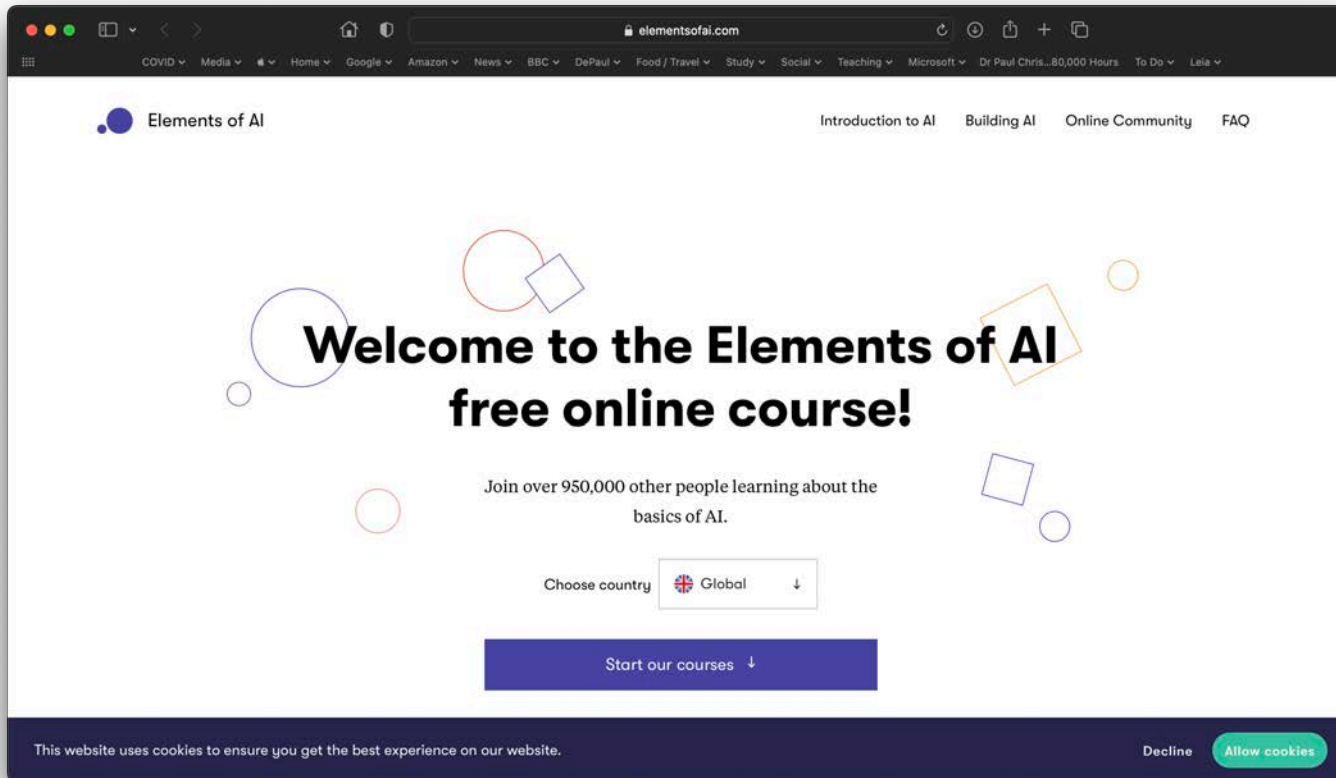
stability.ai

Stable Diffusion



Microsoft

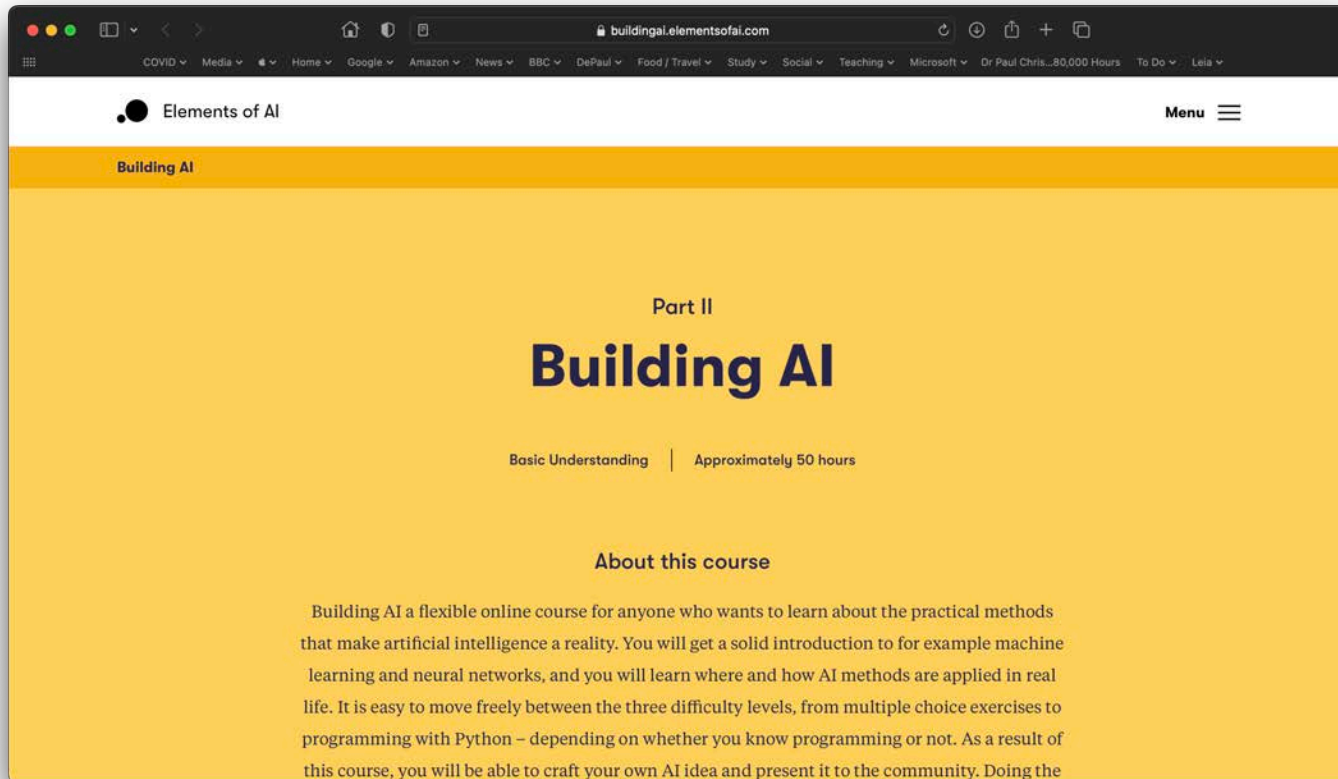
MOOC: Elements of AI



The screenshot shows the homepage of the Elements of AI website. The browser's address bar displays 'elementsosfai.com'. The navigation menu includes 'Introduction to AI', 'Building AI', 'Online Community', and 'FAQ'. The main content area features the 'Elements of AI' logo on the left and a large central heading: 'Welcome to the Elements of AI free online course!'. Below the heading, it states 'Join over 950,000 other people learning about the basics of AI.' There is a 'Choose country' dropdown menu currently set to 'Global'. A prominent blue button labeled 'Start our courses' is positioned below the text. At the bottom of the page, a dark blue footer contains a cookie consent message: 'This website uses cookies to ensure you get the best experience on our website.' with 'Decline' and 'Allow cookies' options.

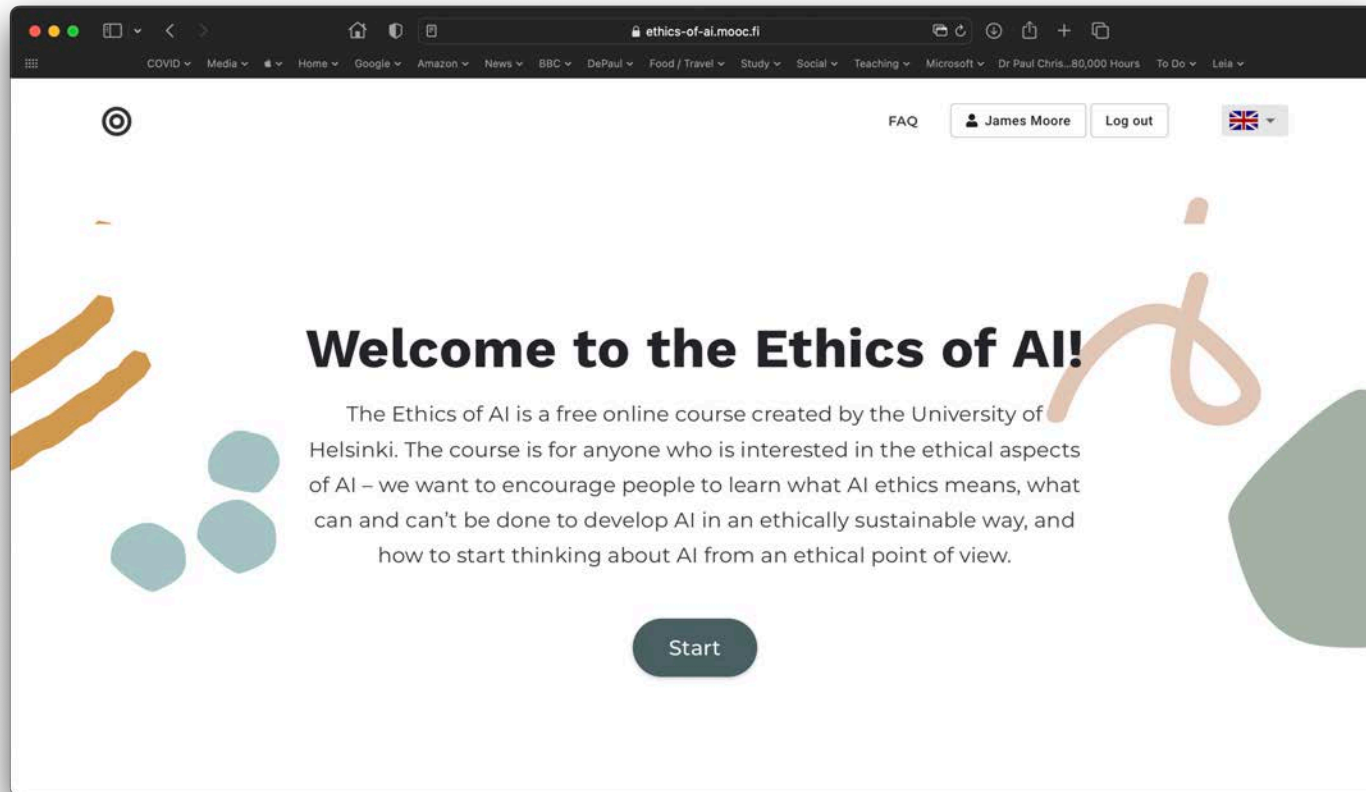
www.elementsofai.com

MOOC: Building AI



buildingai.elementsofai.com

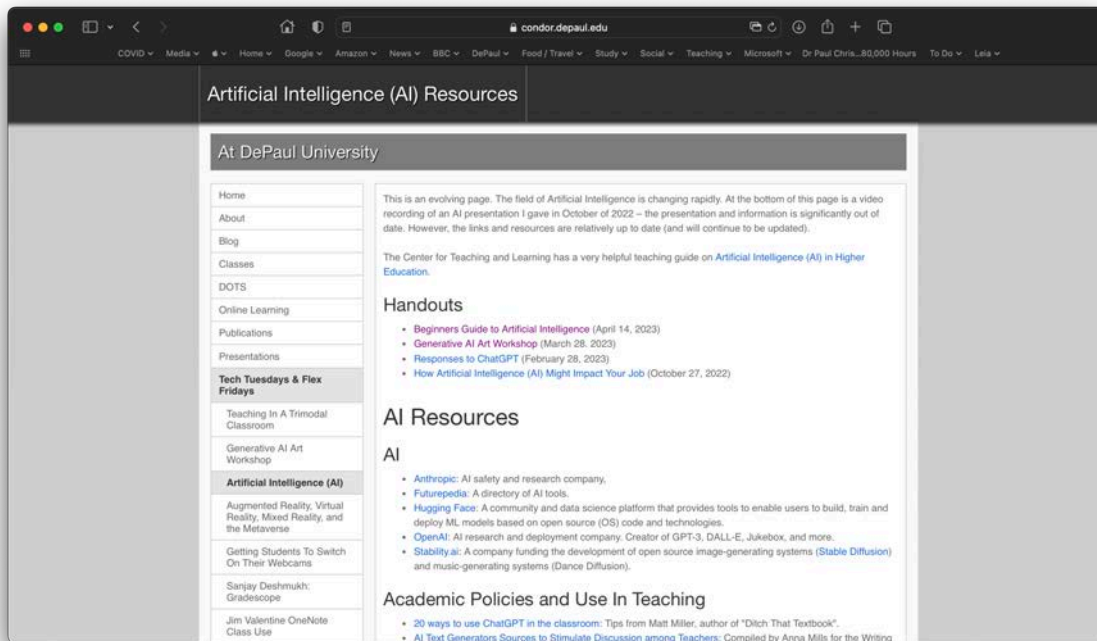
Ethics of AI



ethics-of-ai.mooc.fi

Resources





condor.depaul.edu/jmoore/tech/ai/