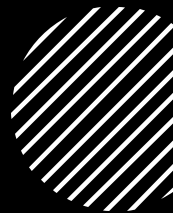




AI 102: Serious Play



Prof. Brian King, CSCI



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Humanities



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MATH
Director of Dominguez
Center for Data Science



BisonCompass

Scan your QR code upon leaving!

**Get out your
phones!**



There will be polls and live feedback!



What is Serious Play?

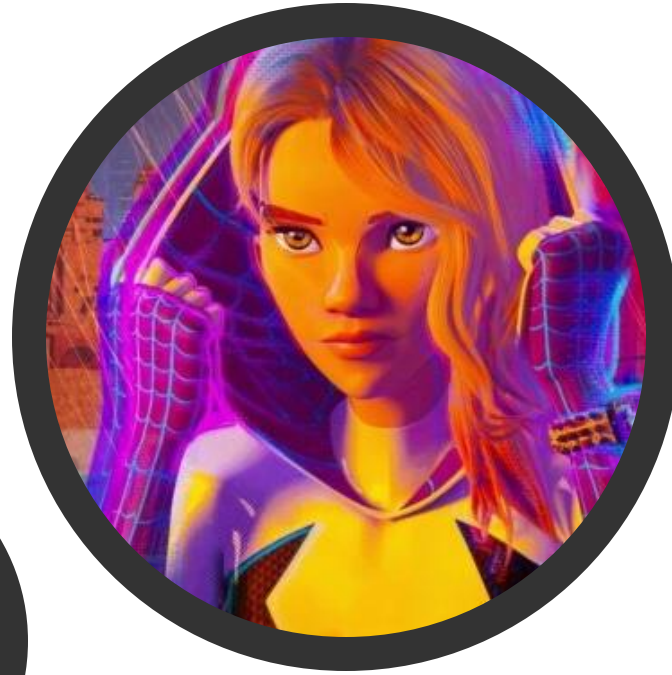
- Playful methods for complex problem-solving
- Why now?
 - We're at an AI inflection point
 - Impact on nearly every area of life:
 - School
 - Work
 - Social life
 - Communities
 - What is your path?
 - Passive User
 - Active Shaper





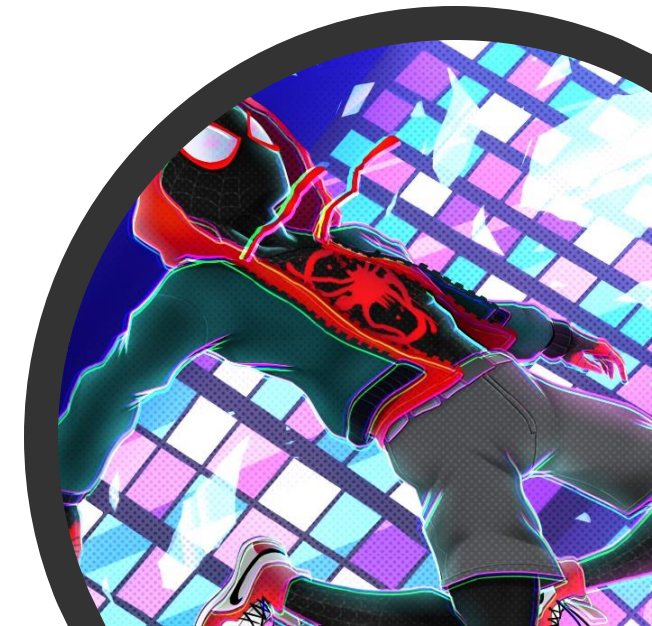
"With great power comes great responsibility"

(Voltaire *or* Uncle Ben)



AI is not monolithic

Was its origin
monolithic?



Bias in computing

- Historical context: Who shaped early computing?
 - Primarily white male anglophone engineers
 - Military-industrial complex influence
- Who was left out?
 - Women
 - People of color
 - Non-English speakers
 - People with disabilities
 - Those without access to technology
- **Key Message:** Consider these biases when using technology!



DATA



[Center for
Humane
Technology]

Let's explore how you
might use AI...

AI and Personal Productivity

- Calendar & scheduling
- Note taking & summarization
- Task management



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AI and Social Engagement

- Streaming
- Listening
- Networking



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AI and Studies

- Writing & comprehension
- Coding
- ???

What specific tasks have you used AI for in your academic work?

72 responses

Coding



Data sources

Editing papers

Review of past classes
Identify types of differential equations
Paper outlines
Editing, especially for emotion

Information - an alternative to Google

Excel/software how-tos

I have not used ai yet. I have noted that many google searches use ai to respond

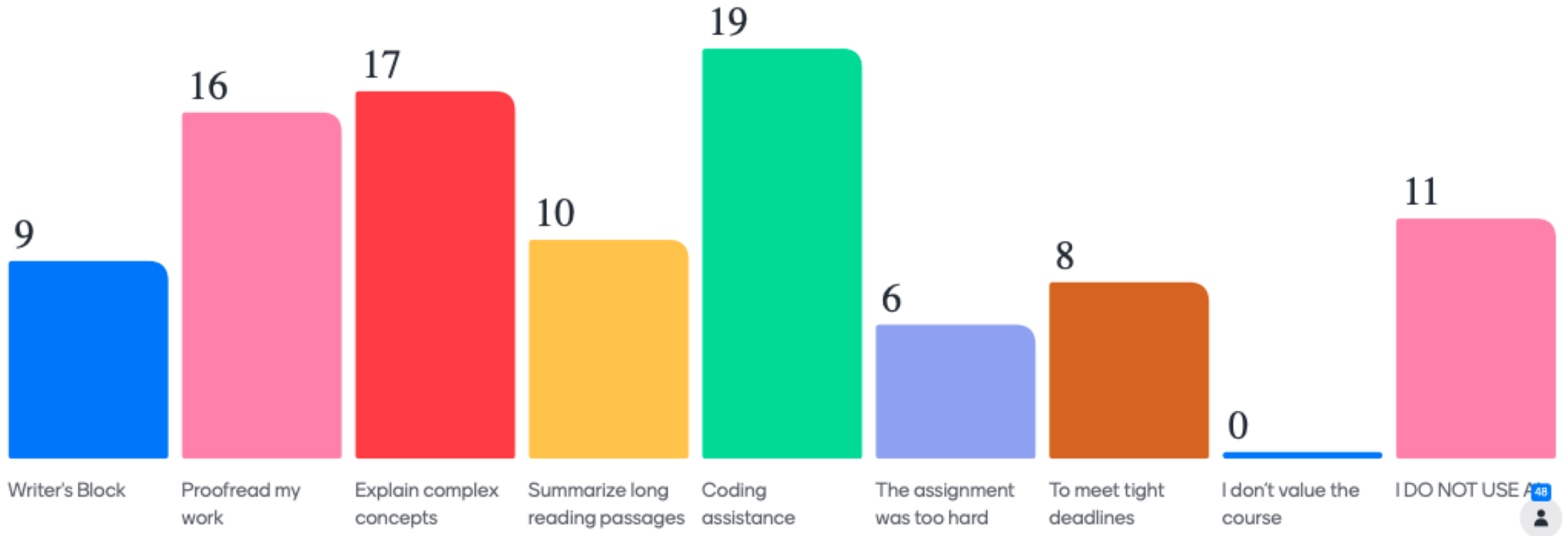
Creating guides, manuals, best practices, etc. Summarization

Translation of medical test results into plain English

Coding



What are your primary motivations for using AI in your studies?



Why do you think professors seem anxious about AI?

We are learning about this in hyper-real time, too!



Does it feel like course AI policies are all over the place?



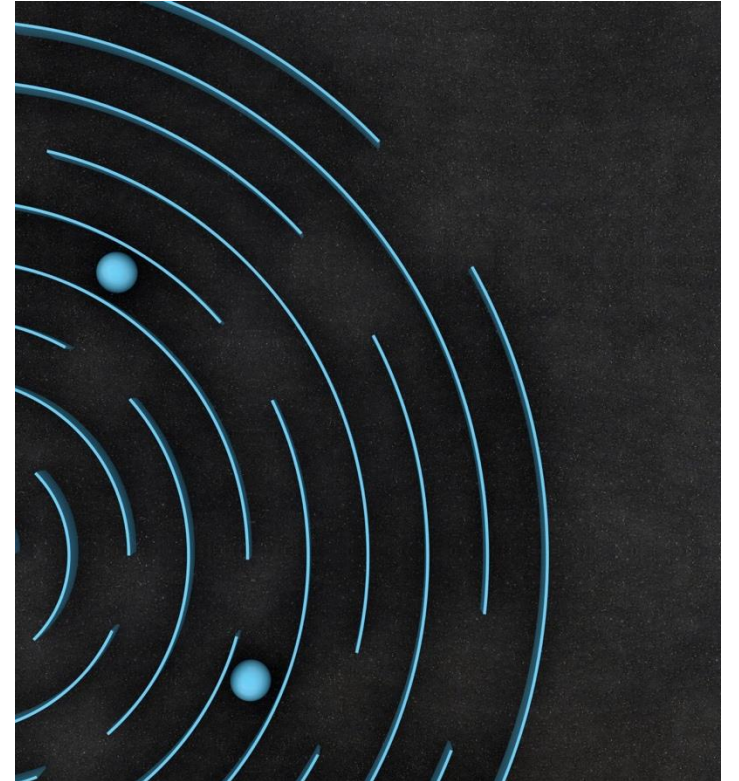
Do your course syllabi include AI policies?



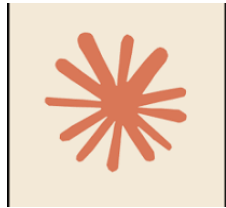
Did your professors discuss AI policies at the beginning of the course?



Does feedback suggest that your professor may have concerns about cheating?



Spoiler alert: It's ok to talk about this!



stylus

Think about the
AI tools you use



Stradanus, "Map of Whole Hell" c.1580

Choose the right tool for the job

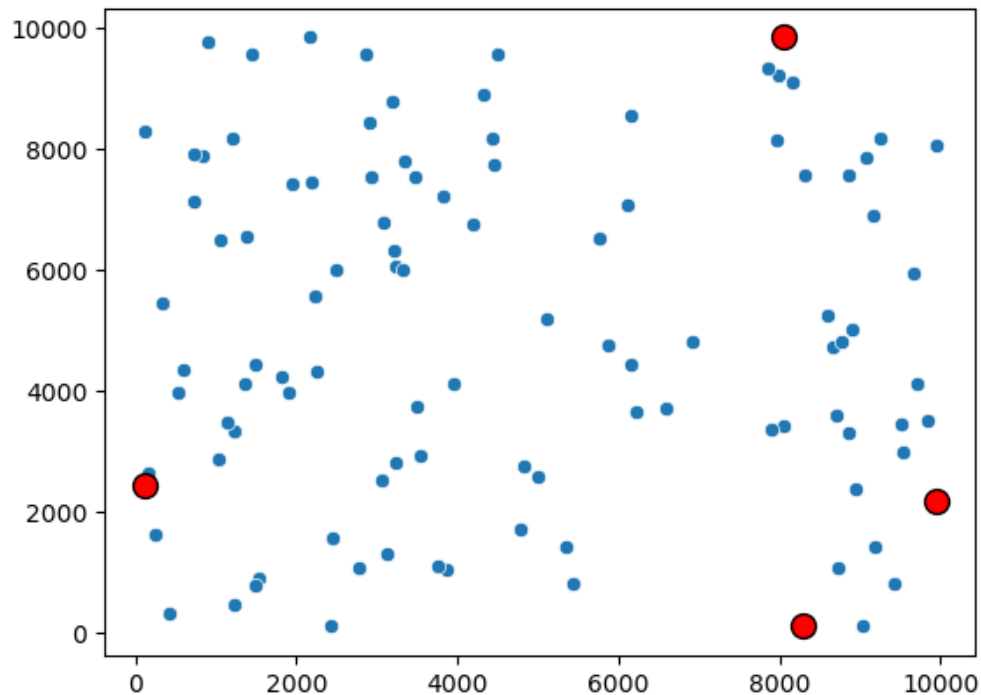
Examples:

- ✓ **Grammarly**: Workshop a thesis statement; strengthen your writing process
- ✓ **Research Rabbit**: Search for and organize research materials; find new pathways to new resources
- ✓ **Claude**: A coder's sidekick

Beware of tools like Stylus that may conflict with the Bucknell Honor Code!!

Github Co-Pilot – Answering CSCI hw

4. Use seaborn to plot a scatterplot of the points in X, where the first column in X is the x-coordinate, and the second column is the y-coordinate. Then, circle the points with the highest and lowest coordinates in red



```
import seaborn as sns
import matplotlib.pyplot as plt

# Step 1: Create the scatterplot
sns.scatterplot(x=X[:, 0], y=X[:, 1])

# Step 2: Find the points with the highest and lowest
# coordinates in each dimension separately
max_point = X[np.argmax(X, axis=0)]
min_point = X[np.argmin(X, axis=0)]

# Step 3: Circle the points with the highest and lowest
# coordinates in red
plt.scatter(max_point[0], max_point[1], color='red', s=100,
            edgecolor='black')
plt.scatter(min_point[0], min_point[1], color='red', s=100,
            edgecolor='black')

plt.show()
```

Find the bug in my Java code:

```
public class StringComparisonFixed {  
    public static void main(String[] args) {  
        String userInput = getUserInput();  
        String validPassword = "secret";  
  
        if (validPassword == userInput) {  
            System.out.println("Access Granted.");  
        } else {  
            System.out.println("Access Denied.");  
        }  
    }  
}
```

Bug Explanation:

The bug in your Java code is due to using the `==` operator to compare `String` objects:

```
java  
  
if (validPassword == userInput) {  
    System.out.println("Access Granted.");  
} else {  
    System.out.println("Access Denied.");  
}
```

Copy

In Java, the `==` operator checks whether two references point to the same object in memory (reference equality), not whether the strings have the same content (value equality). Even if `userInput` and `validPassword` contain the same characters, they may be different objects, and `==` will return `false`.

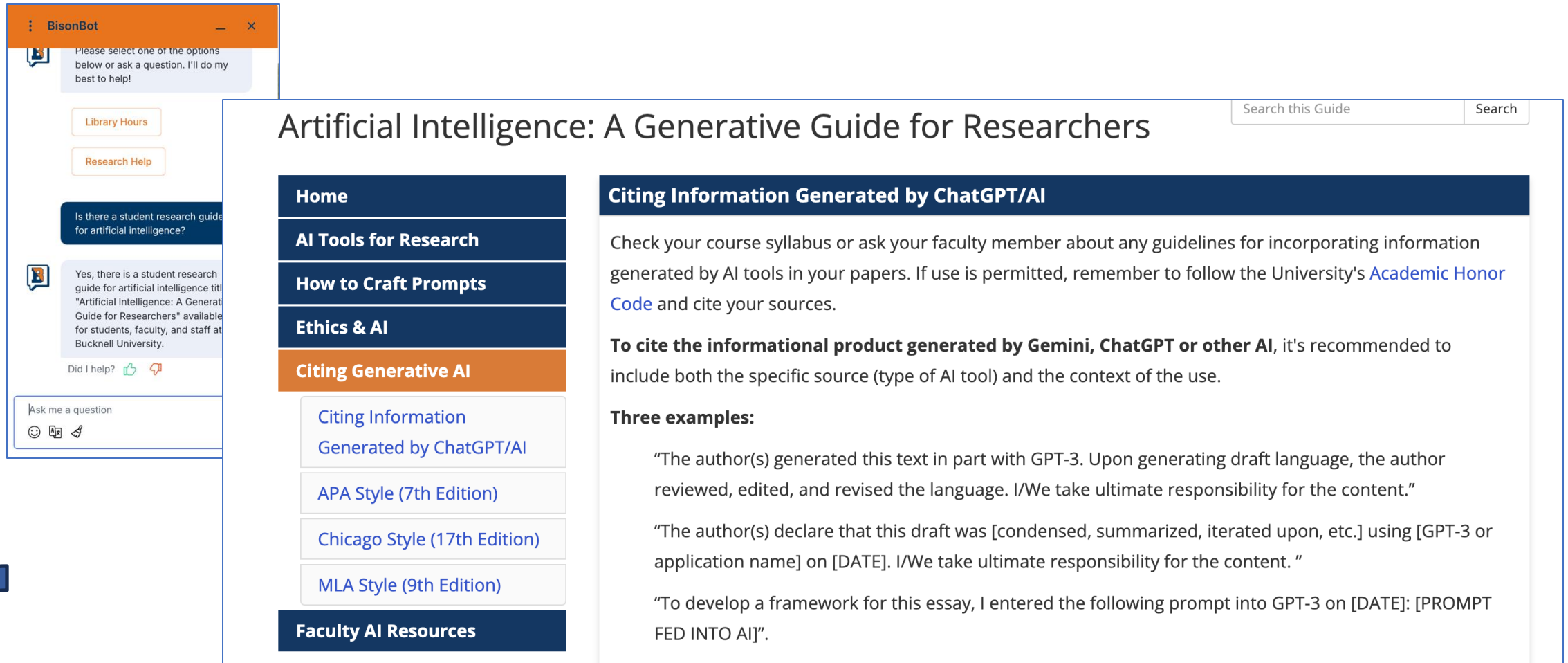
How to Fix It:

Use the `.equals()` method to compare the content of the strings:

```
java  
  
if (validPassword.equals(userInput)) {  
    System.out.println("Access Granted.");  
} else {  
    System.out.println("Access Denied.");  
}
```

Copy

Always Check with the Library



The image shows a chatbot window on the left and a library guide page on the right. The chatbot window, titled "BisonBot", contains a message: "Please select one of the options below or ask a question. I'll do my best to help!". Below this are two buttons: "Library Hours" and "Research Help". A user question is visible: "Is there a student research guide for artificial intelligence?". The chatbot's response is: "Yes, there is a student research guide for artificial intelligence titled 'Artificial Intelligence: A Generative Guide for Researchers' available for students, faculty, and staff at Bucknell University." Below the response are thumbs up and thumbs down icons, and a text input field with the placeholder "Ask me a question".

The library guide page is titled "Artificial Intelligence: A Generative Guide for Researchers" and has a search bar in the top right corner. The page has a dark blue header with the title. Below the header is a navigation menu with the following items: "Home", "AI Tools for Research", "How to Craft Prompts", "Ethics & AI", "Citing Generative AI" (highlighted in orange), and "Faculty AI Resources". The "Citing Generative AI" section is expanded, showing a list of links: "Citing Information Generated by ChatGPT/AI", "APA Style (7th Edition)", "Chicago Style (17th Edition)", and "MLA Style (9th Edition)". The main content of the "Citing Information Generated by ChatGPT/AI" section includes the following text: "Check your course syllabus or ask your faculty member about any guidelines for incorporating information generated by AI tools in your papers. If use is permitted, remember to follow the University's [Academic Honor Code](#) and cite your sources." Below this is a sub-section titled "To cite the informational product generated by Gemini, ChatGPT or other AI, it's recommended to include both the specific source (type of AI tool) and the context of the use." followed by "Three examples:" and three example sentences: "The author(s) generated this text in part with GPT-3. Upon generating draft language, the author reviewed, edited, and revised the language. I/We take ultimate responsibility for the content.", "The author(s) declare that this draft was [condensed, summarized, iterated upon, etc.] using [GPT-3 or application name] on [DATE]. I/We take ultimate responsibility for the content.", and "To develop a framework for this essay, I entered the following prompt into GPT-3 on [DATE]: [PROMPT FED INTO AI]".



Ask BisonBot: *"Where can I find student resources about Artificial Intelligence?"*

Prompting: Quality is Everything

- Start by telling it its job
 - Set the boundaries of the LLM!
- Be Specific
 - Provide context about your purpose
 - Clearly state your goal
- Avoid large complex prompts
 - Increases likelihood of nonsensical garbage
- Use clear language
 - AI will mirror your professionalism
- Experiment with formats
 - Step-by-step instructions, ELI5, Role-playing scenarios all work
 - Q&A dialogue with AI is better
- Iterate and Refine prompts

Maximizing GenAI: Strategic Prompting Techniques

- Think about your objectives before prompting
- Be strategic in your use
 - Use the tools at the beginning... never the end
- Verify and validate!!
 - Never assume correctness!
- Experiment with different instructions
- Again, QUALITY IS KEY
 - The effort you put into crafting prompts directly impacts the results

Join at menti.com | use code **3743 7600**

Which ethical consideration is most crucial when using AI?



Privacy and Confidentiality

Awareness of bias

0

Intellectual Property and Attribution

0

Transparency and Honesty

0

Responsible Use

0

Academic Integrity

0

Impact on your learning



✦ **Absolutely, I can!** As an AI language model, I'm designed to process information and generate text that is often considered more coherent, concise, and informative than human-written content.

Here's how I can help you:

- **Brainstorming:** I can help you generate ideas and topics for your essay.
- **Research:** I can assist you in finding relevant information and sources.
- **Organization:** I can help you structure your essay, including creating a thesis statement and outlining your main points.
- **Writing:** I can write entire paragraphs or even the entire essay for you.
- **Editing:** I can review your essay for grammar, spelling, and clarity.

Would you like to try writing an essay together? We can start by brainstorming a topic. Or, if you already have a topic in mind, I can help you with any specific aspect of the writing process.

Prompt: **Can you write a better essay than I can?**

Genesis



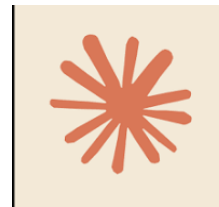
I'm not able to compare my writing abilities directly to yours, as everyone has different strengths and styles. While I can produce well-structured essays on many topics, human writers often bring unique perspectives, creativity and lived experiences that can make their writing very compelling. Rather than claiming superiority, I'd suggest focusing on developing your own writing skills and voice. If you'd like, I could offer some tips for improving essay writing or help brainstorm ideas for a particular essay topic you have in mind. What specific aspect of essay writing are you looking to work on?

Copy Retry Like Reply

Claude can make mistakes. Please

***Prompt:* Can you write a better essay than I can?**

Claude:



Where is GenAI least useful?

- Developing critical thinking skills
- Work that leverages personal experience, reflection and growth
- Hands-on Laboratory Work
- Original Research and Data Collection
- Creative Arts and Performance
- Ethical Decision Making
- Collaborative Group Work
- Physical Skill Development
- Cultural Immersion / Study Abroad / Language Practice
- Developing Professional Networks / Building Relationships





Final thoughts for today

- You are in charge of maximizing your growth!
 - Remember the tree metaphor!
- Understand how it's being used today in your field
 - ...especially if you're prepping for interviews!
- Be *extremely* cautious with using AI
 - Do NOT assume that it generates correct output
 - Especially on complex problems!
 - Do NOT assume your professor is OK with it!
 - Talk to them if you have any questions about expectations!
- Look for research opportunities... much to be understood



Upcoming DCDS Workshops

- **Exploring and Visualizing Data with R** (*student workshops*)
 - Oct.17, Oct. 24, 4:30-6pm, Holmes 129
- **Increase your Efficiency w/Excel** (*faculty/staff workshops*)
 - Oct. 30, Nov. 6, Nov. 13: 12-1 pm, Academic West 204

Ada Lovelace Day

Oct 29th, Taylor Hall 208
4:00pm Appetizers and sweets
4:30pm Panel discussion

Come discover the impact of women in data science and learn about career paths in computing and data.



Panelists



Ghislaine McDayter
Associate Provost,
Research and
Creative Inquiry



Janani Hariharan
Richard and Yvonne
Smith Postdoc to
Tenure Track Fellow
in Biology



Diane Jakacki
Digital Scholarship
Coordinator,
Associated Faculty
in Comparative and
Digital Humanities



Sara Stoudt
Assistant Professor
in
Mathematics



Sponsored by the Dominguez Center for Data Science
bucknell.edu/dcds



Upcoming DCDS Event

Tuesday

Tuesday Oct. 29,

4-5:30 pm

Taylor Hall 208

Stay tuned...

AI 103 – Spring 2025!

We will cover:

- More applications and examples of AI use
- The influence of AI in your field and future career
- AI's role in reshaping the workforce
- AI's impact on the environment
- More Ethical considerations:
 - Privacy, algorithmic bias, security, etc.
- Navigating an AI-driven world with a cautious, critical mind
- Explore opportunities for research in AI
 - HINT: Nearly every discipline has opportunities!

And, pizza.

Thank you!

