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Five Fictional Case Studies in the Errors of GenAI

with discussion questions.

Table of Contents

[Introduction 2](#_Toc198747190)

[Case Study 1. The Confident Hallucination 3](#_Toc198747191)

[Case Study 2. The Biased Resume Helper 4](#_Toc198747192)

[Case Study 3. The Plagiarized Essay 5](#_Toc198747193)

[Case Study 4. The Misleading Medical Advice 6](#_Toc198747194)

[Case Study 5. The Misquoted Source 7](#_Toc198747195)

# Introduction

These case studies can be delivered in any manner that best suits you. I have found that it works best if I divide my class into three parts:

1. The main lesson delivered introducing the topic for consideration (5-10 minutes).
2. A discussion session where students were put in groups in-person or in on-line break-out rooms and take their time to discuss the key points of the lesson, as well as consider some questions supplied to them (20 minutes).
3. The sharing session, where students share their thoughts with the entire class, either using the on-line classroom, or in an anonymous note-making environment like Padlet (20 minutes).

This allows the students to develop an ownership of the content, and to construct their own meaning of the lessons being taught.

**Consequence Scanning**

If you don’t want to use the questions below, another way to help students anticipate the potential outcomes of the software systems mentioned in each case study, they could reflect on the following three questions:

* What are some of the potential consequences (intended and unintended) of this software?
* Which of those are positive consequences, and how can we enhance them?
* Which of those are negative consequences, and what should we do to mitigate them?

# Case Study 1. The Confident Hallucination

**Description:**

Samantha, a college sophomore studying international relations, is writing a paper on Cold War diplomacy. Pressed for time, she asks a GenAI tool to summarize key agreements during the 1960s. The tool generates a detailed paragraph about U.S.-Soviet relations, including a statement that “President John F. Kennedy signed the Helsinki Accords in 1962, marking a major step toward reducing East-West tensions.” The information sounds plausible and is presented with academic tone and citations. Samantha includes the detail in her paper without double-checking.

After submitting her assignment, her professor flags the error: the Helsinki Accords were signed in 1975, long after Kennedy's death. The professor explains that this factual inaccuracy weakened the credibility of her otherwise well-written essay.

**Suggested Talking Points:**

* Why do GenAI tools sometimes produce factual errors that sound convincing?
* What steps should Samantha have taken before including the AI-generated content in her paper?
* How can students balance using GenAI tools with maintaining academic integrity?
* What are the potential academic consequences of relying too heavily on AI for factual information?

# Case Study 2. The Biased Resume Helper

**Description:**

Two students, Jordan and Maya, are applying for internships at a prominent engineering firm. They both use a popular GenAI tool to help draft their cover letters. Jordan, who inputs a traditionally male name, receives a letter emphasizing leadership, innovation, and competitive spirit. Maya, using a traditionally female name, receives a letter that highlights collaboration, empathy, and teamwork. Curious, they swap names and rerun the prompt — and see the tone of the letters shift again.

When they show these letters to a career counsellor, she points out that while all the qualities are valuable, the AI appears to be reinforcing gender stereotypes subtly. Maya's letter could be perceived as less assertive, possibly disadvantaging her in a competitive field.

**Suggested Talking Points:**

* What does this case reveal about how AI systems learn from biased data?
* How might biased output in professional writing affect career opportunities?
* What strategies can students use to detect and correct for bias in AI-generated text?
* Should users be responsible for checking GenAI output for fairness? Why or why not?

# Case Study 3. The Plagiarized Essay

**Description:**

Kevin, a first-year literature student, struggles to analyse symbolism in Shakespeare’s Macbeth. He turns to a GenAI tool for help, which produces a well-organized essay exploring themes of darkness and ambition. The writing seems too polished for Kevin’s typical style, but he copies and submits it anyway.

His professor runs the paper through plagiarism detection software, which flags several phrases and entire paragraphs as matching a well-known literary analysis website. Confronted, Kevin claims the AI generated the content from scratch, but the professor points out that this does not excuse academic dishonesty. Kevin receives a failing grade for the assignment and is reported to the academic integrity board.

**Suggested Talking Points:**

* Why might GenAI tools reproduce content that matches existing published work?
* Who is responsible for ensuring academic integrity when AI tools are involved?
* How can students use GenAI ethically without risking plagiarism?
* What are some red flags that should warn a student to double-check AI-generated content?

# Case Study 4. The Misleading Medical Advice

**Description:**

During midterms, Layla experiences frequent headaches and fatigue. Worried but too busy to visit a doctor, she types her symptoms into a GenAI chatbot, asking, “What could this mean?” The AI replies with a list of possibilities, starting with stress and dehydration but ending with “possible early symptoms of a brain tumour or neurological condition.” Alarmed, Layla spirals into anxiety, cancels her exams, and tells her family she may need urgent medical treatment.

Later, a physician assures her that her symptoms are consistent with poor sleep, screen overuse, and stress—nothing serious. Layla is frustrated with herself for trusting an AI tool for medical advice without professional input.

**Suggested Talking Points:**

* What are the dangers of relying on GenAI for health or legal advice?
* How might the way information is presented by AI affect someone’s emotional response?
* In what types of situations should AI-generated responses always be verified with experts?
* How can education help users understand the limits of GenAI in high-stakes areas?

# Case Study 5. The Misquoted Source

**Description:**

A senior student, Lila, is writing her final paper on the emotional impact of trauma in Toni Morrison’s Beloved. She asks a GenAI tool to provide poignant quotes that highlight the character Sethe’s psychological state. The tool returns several quotes, including one that reads, “Sethe carried the memories like stones—heavy, buried, and unspoken.”

Struck by its elegance, Lila includes it in her paper and attributes it to page 143. However, when her professor checks the citation, the quote cannot be found anywhere in the book. Further investigation reveals the quote is completely fabricated—the AI created a line in Morrison’s style, but it does not exist in the text.

**Suggested Talking Points:**

* Why might a GenAI tool fabricate quotes or citations?
* What risks does fabricated content pose to academic credibility?
* How can students verify whether a quote or citation is accurate before using it?
* Should AI tools be allowed to generate quotes from literature? Why or why not?