

# Artificial Intelligence for Learning and Research in Higher Education

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# Introduction

In the twenty-first century, artificial intelligence has profoundly affect individuals' lives and is widely recognized as an effective tool for improving and enhancing daily life (Górriz et al., 2020).

According to Thormundsson (2023), there is a substantial expansion in the user base of various AI tools, including generative image and text, between 2020 and 2030. In 2023, the number of individuals utilizing AI tools surpasses 250 million, indicating a tripling of this figure to over 700 million by the year 2030.

With regard to the field of higher education, the utilization of artificial intelligence has seen rapid growth over the last five years (Chu et al., 2022)



# Introduction

With the growing awareness of the benefits of artificial intelligence, university students are becoming more motivated to enhance their knowledge and skills in this field (Almaraz-López et al., 2023).

Despite the enthusiasm for AI's potential to enhance learning experiences, there is a gap in training and support for pre-service teachers to effectively implement AI in their future classrooms (Gatlin, 2023; Kalniņa et al., 2024; Özer-Altinkaya & Yetkin, 2025 ).



# Academic Ethics

# Hallucination

 Mobile World Live

## [US newspapers file lawsuit against OpenAI, Microsoft](#)

A group of eight US newspapers filed a federal court lawsuit against Microsoft and OpenAI, claiming the tech companies used their articles...

6 Jun 2023



 Fujitsu

## [Fujitsu launches new technologies to protect conversational AI from hallucinations and adversarial attacks](#)

Tokyo, September 26, 2023. Fujitsu today announced the launch of two new AI trust technologies to improve the reliability of the responses from...

26 Eyl 2023



 AP News

## [Chatbots sometimes make things up. Is AI's hallucination problem fixable?](#)

Spend enough time with ChatGPT and other artificial intelligence chatbots and it doesn't take long for them to spout falsehoods...

1 Agu 2023



 TorrentFreak

## [Newspapers Sue OpenAI for Copyright Infringement and 'Fake News' Hallucinations](#)

Eight newspapers, including the Chicago Tribune and the Denver Post, accuse Microsoft and OpenAI of copyright infringement.

5 Jun 2023



 Coeur d'Alene Press

## [OPINION: AI concerns aren't just hallucinations](#)

This report is the third I have written on Artificial Intelligence (AI). The first two reports are in The Spokesman of May 17, 2023.

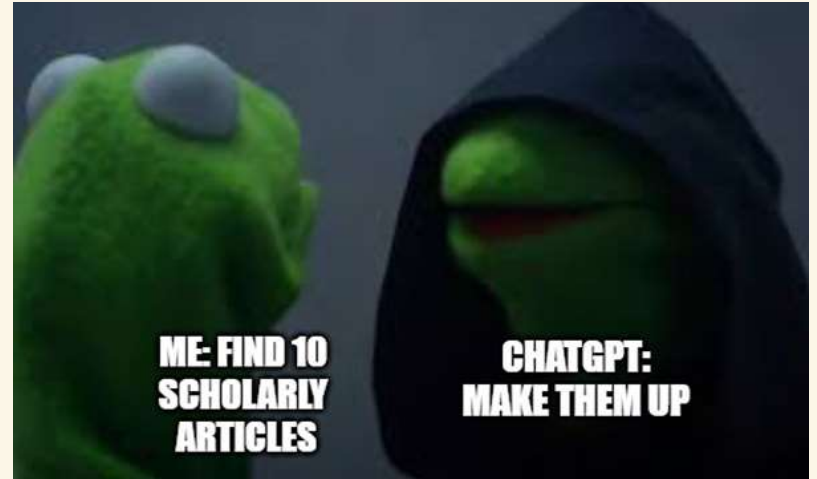


# Hallucination

Athaluri et al. (2023) found that 178 references was analyzed, 69 references did not have a Digital Object Identifier (DOI), and **28 references didn't exist on Google search**. Three references were listed from books and not research articles.

The study highlights the potential limitations of ChatGPT's ability to **generate reliable references**.

AI hallucination is a problem that may negatively impact decision-making and may give rise to ethical problems.





**You**

Can you give the articles about active learning with end text reference list?



**ChatGPT**

Certainly! Here are some articles about active learning along with their reference list:

Felder, R. M., & Brent, R. (2009). Active learning: An introduction. *ASQ Higher Education Brief*, 2(4), 1-5.

Tanner, K. D. (2012). Promoting student metacognition. *CBE—Life Sciences Education*, 11(2), 113-120.

Cooper, M. M., Cox, C. T., & Case, E. L. (2018). Building a bridge to active learning in introductory science classrooms. *Journal of College Science Teaching*, 47(1), 24-30.

Bonwell, C. C., & Sutherland, T. E. (1996). The active learning continuum: Choosing activities to engage students in the classroom. *New Directions for Teaching and Learning*, 67(2), 3-16.



# Overreliance

AI has the potential to significantly improve our productivity and efficiency, but the outputs must always be made your own.

Students need to develop critical thinking skills to evaluate the quality and reliability of AI-generated content and avoid over-reliance on automated tools (Chan, 2023; Tili et al., 2023).

**Double-check AI-generated content:** Ensure the facts and information provided by AI systems are accurate before using them in critical situations.

**Keep human oversight in the loop:** AI systems can make errors, so it's essential to have human involvement in the decision-making process for the final product.



# Privacy Issue



**Varun Giridhara**  
@iamvarung



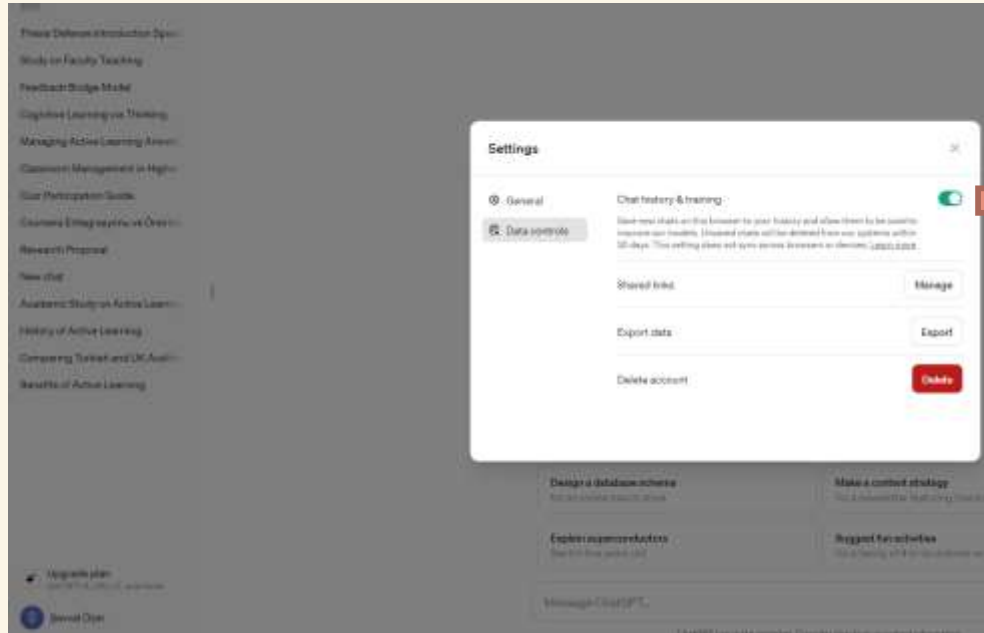
@OpenAI Chat GPT loaded someone else's chat history today. Complete #violation of #privacy

#ChatGPT

These chat histories are not mine.

- + New chat
- Non-traditional synonyms.
- Undo Compatibility Mode.
- New chat
- Citation for Bitcoin Prices.
- ICT definition and examples.
- Phobia of Rats.
- კარბონული უნის გზობა.
- Infra & Ecology Leadership.
- Referee: Professor or Lecturer.
- Social Research Foundation.
- Collaboration for Interdiscipli
- Rewrite Sentence Ideas
- AI World Change Sentences
- Sexist Music Video Clips
- New chat
- Anthro VS Sociology

# Privacy Issue



**Turn off your chat history & improving the model for everyone**



**Even though you turn off your history chat, who can guarantee that your information is not being stored?**

# Plagiarism Detectors



The screenshot shows the Feedback Studio interface. The main document area displays text about the United Arab Emirates (UAE) with several red annotations. A blue callout box points to the text "Similarity Score is separate and independent of the AI indicator". The right sidebar shows a "Match Overview" panel with a red header and a large "10%" similarity score. Below this, a list of matches is shown, including "1. workspointinternational.org" with a 6% match and "2. I have a job in UAE" with a 4% match. A blue callout box points to the "AI" indicator in the sidebar, which shows a "100%" score. The bottom of the interface includes a footer with "Page: 1 of 2", "Word Count: 414", and "Text-Only Report" options.

ORIGINAL ARTICLE

Open Access



# Evaluating the efficacy of AI content detection tools in differentiating between human and AI-generated text

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## Abstract

The proliferation of artificial intelligence (AI)-generated content, particularly from models like ChatGPT, presents potential challenges to academic integrity and raises concerns about plagiarism. This study investigates the capabilities of various AI content detection tools in discerning human and AI-authored content. Fifteen paragraphs each from ChatGPT Models 3.5 and 4 on the topic of cooling towers in the engineering process and five human-written control responses were generated for evaluation. AI content detection tools developed by OpenAI, Writer, CopyLeaks, GPTZero, and CrossPlag were used to evaluate these paragraphs. Findings reveal that the AI detection tools were more accurate in identifying content generated by GPT 3.5 than GPT 4. However, when applied to human-written control responses, the tools exhibited inconsistencies, producing false positives and uncertain classifications. This study underscores the need for further development and refinement of AI content detection tools as AI-generated content becomes more sophisticated and harder to distinguish from human-written text.

**Keywords:** AI-generated content, Plagiarism, Academic integrity, ChatGPT, AI content detection tools

# How do you cite AI and ChatGPT in APA?

## Full citation in reference list:

OpenAI. (2023). *ChatGPT* (Mar 14 version) [Large language model]. <https://chat.openai.com/chat>

## In-Text Citation Examples:

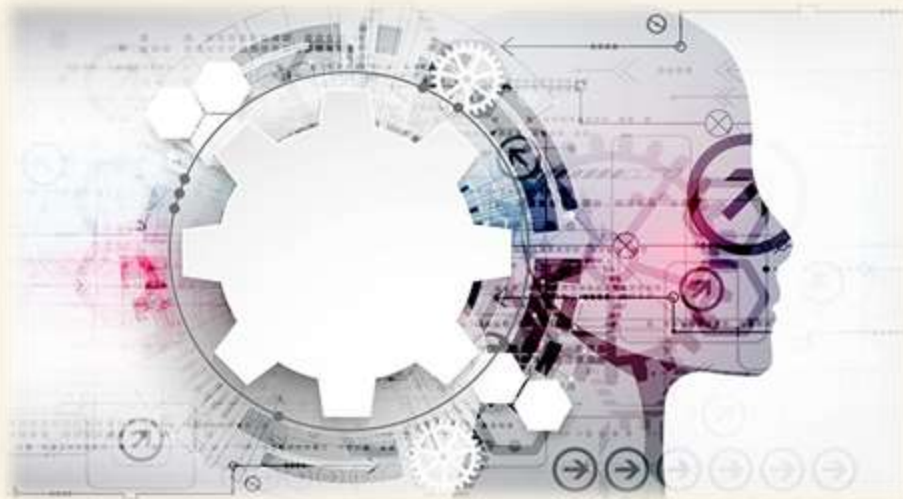
Higher education is akin to a library, filled with countless books representing knowledge and wisdom from various disciplines. Students navigate through the shelves, selecting and absorbing the information that resonates with them, ultimately crafting their own narrative of understanding and insight (OpenAI,2023).

When asked to summarize Nagel's essay, OpenAI's ChatGPT (2023) described it as an argument that “*it is impossible for humans to fully understand the subjective experience of other beings, particularly animals*”

# Myths and Misconceptions

- AI can think and feel like a human
- AI understands content like humans do
- AI can generate entirely new text
- AI can surpass human intelligence in all areas
- AI is only for use by technically skilled people
- AI can solve any problems
- AI can be objective





# Professional Development

# AI Tools for Improving Resume

AI resume tools help you to create eye-catching, professional resumes that effectively showcase your skills and experience.

- ❖ **Enhancv**
- ❖ **Kikresume**
- ❖ **Rezi**
- ❖ **Jasper.ai**



### Resume Analysis

## Analyze Your Resume's Effectiveness

Get instant, real-time feedback for your resume with actionable recommendations to enhance your resume's structure, format, content quality and more. Check your resume score and follow our step by step guidance to make improvements to your resume.

[See Your Resume Results](#)

**Google**

Senior Marketing Manager

07/2018 - Present

- Developed and implemented a comprehensive SEO strategy that resulted in a 30% increase in organic traffic and a 20% increase in online sales.

**79%** Match Score

Number of Achievements in Work Experience #2

Number of Achievements in Education #2

Year-based Statement Missing in Professional Summary

## What skills would you like to highlight?

Choose from our pre-written examples below or write your own.

SEARCH BY JOB TITLE FOR PRE-WRITTEN EXAMPLES

Customer Service Representative

Based on This:

- Call Center Customer Service Representative
- Customer Service Representative Agent
- Multi-line Customer Service Representative
- Customer Service Sales Representative

Showing results for Customer Service Representative

- Expert Recommended Information Security
- Expert Recommended Report Generation
- Expert Recommended Complaint Resolution
- Expert Recommended Consultative Sales

Skills

- Product Knowledge
- Complaint Resolution
- Consultative Sales
- Data Entry
- Scheduling
- Data Collection

We recommend 6 to 12 skills

- All skills relevant to your target job.
- Prioritize your resume to avoid white space in different columns.
- Combine similar skills into one bullet.

Skills 6 Professional writers recommend 6 to 12 skills.

[← Back](#) [Next: Summary](#)

### Job Matching

## Match Your Resume to Job Descriptions

Strengthen your resume with keywords from job descriptions and format recommendations. Attach your desired position and we'll highlight the keyword insights to help you build a tailored resume based on the job.

[Start Matching for Free](#)

**WeWork**

Senior Marketing Manager

07/2018 - Present

- Implemented website optimization strategies that resulted in a 35% increase in conversion rates and a 20% increase in organic search traffic.
- Developed and implemented a global campaign strategy that resulted in a 35% increase in lead generation, 20% increase in customer value.
- Helped grow awareness and built an internal marketing strategy that increased website traffic by 35% and lead generation by 10% within the first 6 months.
- Used data analytics to identify key performance indicators and optimize campaign performance, resulting in a 15% increase in ROI.

**Nvidia**

Senior Marketing Manager  
Chief - New York, NY

70% Good Match Score

Keywords: Marketing, Events, Analytics, Sales

# AI for Job Interview Preparation

❖ **ChatGPT** I will apply for (X) position after my graduation.

What are some questions I could expect at the interview?

Can you give me some examples of appropriate answers to these questions?

What are some things that I shouldn't say during the interview?



# Cover Letter

❖ **Simplified**



**Instead of asking:** Write a cover letter for an software engineer role.

❖ **Kickresume**

❖ **ChatGPT**



**Ask:** I am applying for a software developer position at an ABC company and I would like your help writing a personalized cover letter. The job requires experience in software development, specifically in Java and Python. The ideal candidate should also have experience working in a team, strong problem-solving skills, and the ability to learn quickly. **I would like cover letter to highlight my experience in these areas and how they make me a suitable fit for the position. Additionally, I would like to convey my enthusiasm for the company. Please also make sure to include a professional and confident tone, and emphasize how I can contribute to the company's success.**

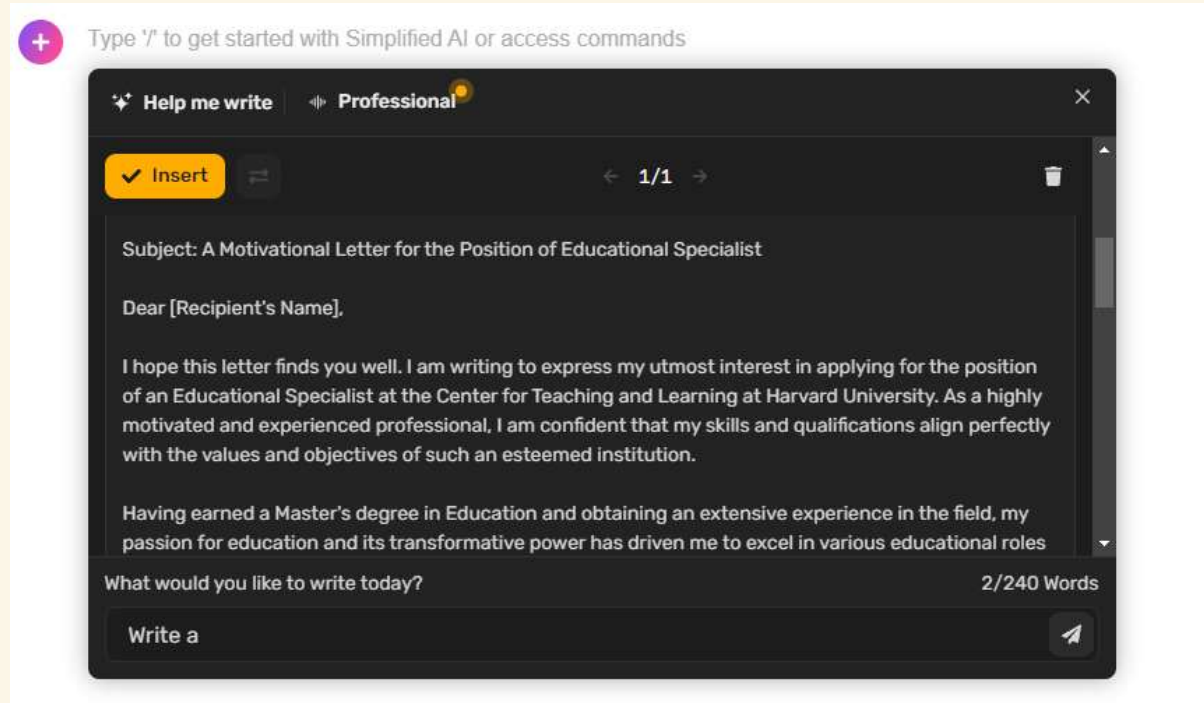


# Cover Letter

- Write a cover letter for a job application as a **[position]** at **[company]** using my resume below as a reference.
- Draft a persuasive cover letter in 150 words highlighting my qualifications and enthusiasm for the **[position]** at **[company]** using my resume below.
- Create a compelling cover letter that explains why I am the best fit for the **[position]** at **[company]**.
- Compose a professional cover letter demonstrating how my abilities align with the requirements for the **[position]** at **[company]**. Use the information below as a guide.

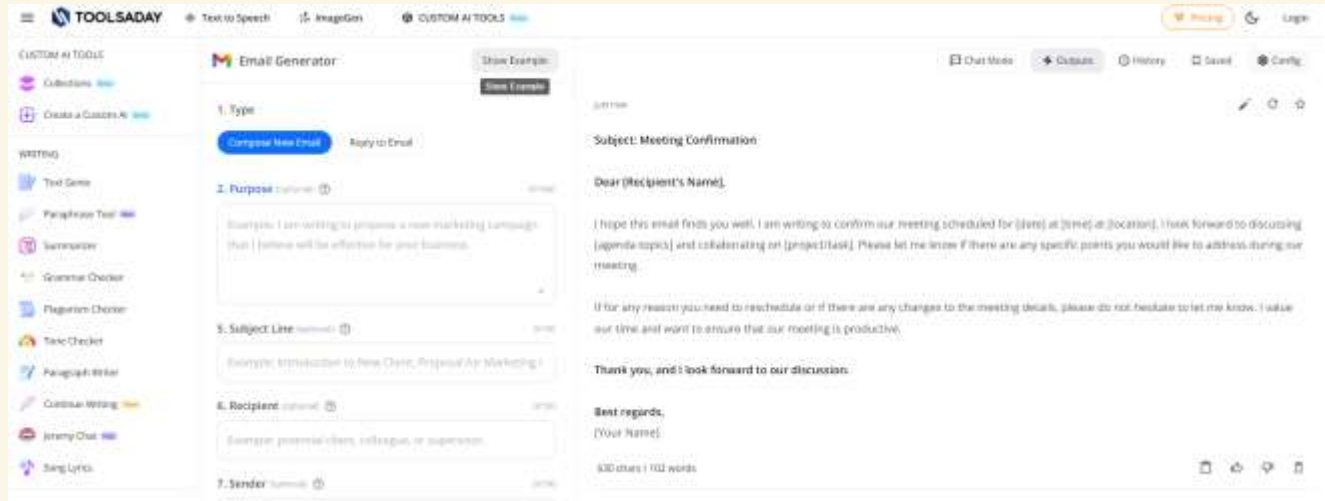
# Motivation Letter For Internship

- ❖ Simplified
- ❖ ChatGPT



# AI Email Writing

- ❖ WriteMail.ai
- ❖ ChatGPT
- ❖ Toolsaday
- ❖ QuickMail



# Writing Email a Professor Regarding Research

Subject: Meeting to discuss undergraduate research opportunities

Dear Professor X,

I am a **(year, major)** at **(university)** and I am writing to ask about opportunities for undergraduate research in your lab beginning **(time period)**. I have conducted undergraduate research on **(topic)** with **(names)** in **(program or class)**. **(Expression of interest in the topic)**. I would like to continue a path of research on **(topic)** and would ultimately allow me to **(career goal)**. I am especially interested in your previous work on **(describe a paper/research)**.

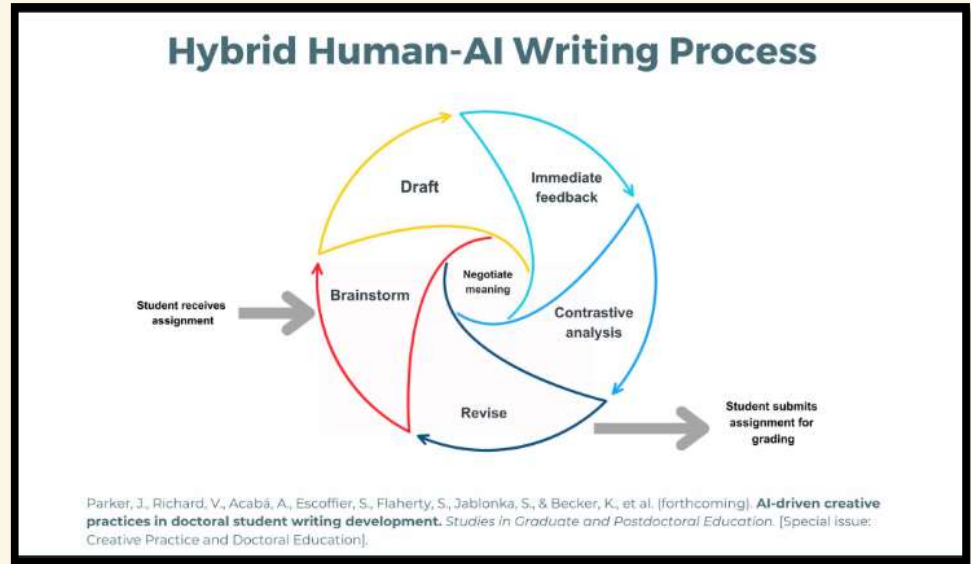
I have attached my CV and transcript to this e-mail, but if there is additional information that I have not included that you would like, I would be happy to provide it to you. Thank you for your consideration.

Sincerely,  
Your Full Name



# Academic Writing

AI-powered tools offer valuable support in different aspects of writing academic essays, such as language correction, grammar checking, and proofreading (Alharbi, 2023; Dale & Viethen, 2021).





Paraphrasing tool helps to rewrite, edit, and change the tone of their text to improve clarity



Providing highly accurate translation services



Helps writing better, faster with real time suggestion for indept language and grammer correction



Offering advanced writing assistance and feedback, enhancing the quality and clarity of their academic writings

# Academic Research



Finding and summarizing scientific research articles related to your questions



Getting similar resource suggestions and summarising article or website texts



Providing access to academic research articles, saving time and effort in the search for relevant scholarly material



Visualizing and exploring academic papers' connections and citations, facilitating comprehensive literature reviews and research synthesis



Listing related articles related to a research question, summarising detailed information in an article and finding the main ideas and themes of articles



helping students to understand complex research paper or articles



# Thank you!

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