AI in Hiring Practices: Efficiency or Bias?

Why?

This lesson on the use of AI in hiring practices is crucial for students as it explores a real-world application of technology that is increasingly influencing the job market they will soon enter. By exploring AI's role in screening applicants and making hiring decisions, students gain insight into how technology can both optimize processes and introduce ethical dilemmas. Understanding this topic prepares students to critically evaluate the growing impact of AI in various sectors and fosters an awareness of the ethical and societal implications of technological innovations they will encounter in their careers and personal lives.

Materials Needed	Time needed
- Projector for presentation - Copies of the case study - Computers for research (optional)	Approximately 60 minutes

Objectives

- Students will be able to identify and explain the various roles of AI in modern hiring practices.
- Students will be able to recognize and critically analyze potential biases in AI-driven hiring processes.
- Students will be able to evaluate the ethical considerations and implications of using AI in hiring.

Key Concepts & Vocabulary

- **Artificial Intelligence (AI):** The simulation of human intelligence processes by machines, especially computer systems, including learning, reasoning, and self-correction.
- **Algorithm:** A set of rules or instructions given to an AI system to help it make decisions or solve problems.
- **Bag of Words model**: A computer text analysis method where all words in a text are converted into a list, allowing for the targeting of specific keywords and analysis of word frequencies and patterns.
- **Human-in-the-loop (HITL):** A model of interaction where a human is involved in the AI decision-making process, particularly in monitoring and evaluations.

Lesson Components

1. **Before You Watch**: Connect lesson to background knowledge about AI use in hiring practices and get students' attention
2. **Video**: Show the pedagogy.cloud video explaining the ethical considerations in the topic of AI in hiring
3. **Case Study**: Detail a real-world scenario that relates to the use of AI in hiring

processes
4. **Simulation**: Lead students through an interactive activity exploring the possible ethical considerations of different people in relation to AI hiring practices
5. **Discussion**: Ask whole-class questions to reflect on experience and consider perspectives.
6. **Assessment**: Verify student understanding with an exit ticket

1. Before You Watch

Quick Brainstorm: Ask students to think about the process of hiring someone to work for a company. Have them mention anything they can think of that would be a characteristic that would make a person more appealing to a company. (For example, punctuality, experience, honesty, education, proven results, communication skills, teamwork, adaptability, professionalism). Write the words on the board. For each word, ask students to say how you can tell if someone has it or doesn't have it. (For example, you can see someone is punctual if they show up to their interview on time.)

While You Watch: Mention these topics and questions for students to look out for as they watch the video:
- Define algorithms in your own words.
- Identify ways in which AI makes the hiring process more efficient.
- Define Human-in-the-loop (HITL).

2. Video Summary

The video explores the growing role of Artificial Intelligence (AI) in modern hiring practices, highlighting its efficiency in processing applications and conducting preliminary assessments, but also raising concerns about potential biases and fairness issues. It discusses the ethical, legal, and societal implications of using AI in recruitment, including the challenges of ensuring unbiased algorithms and the importance of human oversight and diverse training data. The video concludes by examining public opinion on AI-driven hiring and the future of these technologies, emphasizing the need for collaboration between technologists, ethicists, and lawmakers to shape this evolving field.

3. Case Study

Distribute or read Case Study handout.
Summary: A company implements an AI-driven system for sifting through resumes and conducting initial interviews to address the inefficiency of manually handling thousands of job applications. While the system enhances efficiency, it faces criticism for potential biases and lack of human touch, as it was trained on data that included gender imbalances and previous hiring patterns. In response, the company audits the AI system, engages experts to minimize biases, and adopts a hybrid approach with human oversight, highlighting the complex balance between efficiency and fairness in AI hiring practices.

4. Simulation

Scenario: Job Fair at TechCorp

Background: TechCorp, a leading technology company, is hosting a job fair to recruit for various positions. They've implemented a new AI-driven hiring process and are showcasing it at the fair. The AI system screens resumes, conducts initial assessments, and even performs preliminary interviews. However, there's been public debate about the fairness and ethical implications of this approach.

In small groups (4-6 members), students discuss the issue of AI used in hiring. Pass out the simulation handout to provide students with some information about roles and background. (If desired, time could be given for students to research more about the issues being discussed.)

Roles:
- Job Applicant(s) (1-2 per group)
- HR Professional from TechCorp (1-2 per group)
- AI Ethicist (1 per group)
- Company Manager from TechCorp (1 per group)

Guiding Group Discussion:
Encourage students to engage in respectful dialogue, active listening, and consideration of various perspectives.
- Explore not just the challenges but also potential benefits and future implications of AI in hiring.
- Bring up points from their sections and address questions to each other in an effort to get each person to offer perspective on the issue.

Facilitate discussion among students by asking leading questions of specific people in the groups to get discussion moving.
- For Job Applicants
  - You have been rejected because of bad formatting in your document. How do you respond to this scenario, and what are your thoughts about AI making such decisions?
  - Imagine you've been overlooked for an interview despite having relevant experience. How would you convey this concern to the HR professional?
  - You've just learned that your application was assessed positively by AI. How does this influence your perception of AI in hiring?
- For HR Professionals
  - A candidate feels they were unfairly evaluated due to employment gaps. How would you justify the AI's decision or address this issue?
  - How do you explain the role of AI in your hiring process to potential candidates to ensure transparency and understanding?
  - Concerns have been raised about potential bias in the AI system. How will you calm their concerns?

- For AI Ethicists
  - Given the scenario of a candidate being rejected for formatting issues, what ethical concerns does this raise about AI in hiring?
  - How would you suggest addressing potential biases in AI that might lead to overlooking qualified candidates?
  - A candidate feels their rejection was unfair. What recommendations would you make to the company for ensuring ethical AI practices?
- For Company Managers
  - How do you respond to public concerns about AI potentially overlooking qualified candidates due to rigid criteria like formatting?
  - A candidate has expressed feeling dehumanized by the AI hiring process. How does your company plan to balance AI efficiency with human empathy?
  - Considering the ethical implications raised, what changes might you consider implementing in the AI hiring process?

Outcome:
- This exercise helps students explore the complexities of using AI in hiring, considering efficiency, potential biases, ethical implications, and societal needs.
- Students should aim to understand the different viewpoints and articulate a balanced perspective on the use of AI in hiring practices.

5. Discussion

These questions are designed to be used in whole-class discussion. Ask questions that relate most effectively to the lesson.
1. What are the potential advantages and disadvantages of using AI in hiring practices?
2. How can biases be unintentionally incorporated into AI systems?
3. What ethical concerns are raised by using AI in hiring?
4. How can companies balance the efficiency of AI with fairness and transparency?
5. As a job applicant, how might AI impact your experience, both positively and negatively? How important is the human element in maintaining a positive experience?
6. Would you want a company to use AI to assess *your* resume? Why or why not?
7. What do you think is the most significant concern brought up in your group discussions? Is that concern strong enough for you to say that AI should *not* be used in hiring decisions?
8. How do you envision the future of AI in hiring practices? What advancements could you see making the process better or worse?

6. Assessment

Exit Ticket: Provide a prompt for students to reflect on their learning, such as:
- Write a brief reflection on today's lesson.

- What was the most surprising thing you learned about AI in hiring practices?
- How much do you think AI should be used in the hiring process?

Sources to Learn More

- How AI is used in hiring - https://www.themuse.com/advice/ai-in-recruiting-hiring
- Reasons why AI might flag a resume for rejection - https://www.cnbc.com/2023/06/14/job-rejections-can-be-ai-mistakes-how-to-spot-and-fix-them.html
- Pew research on American's views of AI in hiring - https://www.pewresearch.org/internet/2023/04/20/americans-views-on-use-of-ai-in-hiring/
- More information on Human-in-the-loop (HITL) computer training - https://www.bmc.com/blogs/hitl-human-in-the-loop/
- Article about being interviewed by AI - https://www.theguardian.com/technology/2024/mar/06/ai-interviews-job-applications
- EU act that restricts how AI can be used in hiring - https://www.littler.com/publication-press/publication/european-parliament-adopts-worlds-first-comprehensive-ai-law

Case Study: AI in Hiring Practices

Efficiency or Bias?
TechCorp is a leading technology company looking to hire new talent. They implemented an AI-driven system to sift through resumes and conduct initial interviews.

The Problem: With thousands of applications for every job opening, handling the recruitment process manually was inefficient.

The Solution: An AI system was trained on data from past successful hires to identify potentially suitable candidates.

The Stakeholders:
Job Applicants: Some appreciated the efficiency, while others felt dehumanized by the process.
HR Professionals: They found the system efficient but faced criticism over perceived biases.
Management: They were focused on efficiency but had to consider ethical implications.

The Debate:
Efficiency: The system could process applications quickly, but was it fair?
Bias Concerns: Critics argued that the system was biased, reflecting the biases present in the training data. For example, the training set included more resumes from men than from women, so the system learned more about male applicants' qualifications. Additionally, the company had previously hired multiple managers named "Mike," so the bot learned that anyone named Mike gets an interview.
Ethical Considerations: Questions arose about transparency, fairness, and the human touch in hiring processes. For example, the system targeted specific keywords, which a qualified candidate might not have included in a resume, resulting in the company missing out on a good worker.

The Outcome:
TechCorp initiated an audit of the AI system and engaged with experts to identify and minimize biases. They also implemented a hybrid approach, combining AI with **Human-in-the-loop (HITL)** oversight.
The case illustrates the trade-offs between efficiency and fairness in the use of AI in hiring, raising questions about how technology should be implemented responsibly.

Questions:
- After hearing this case study, how would you feel as a job applicant knowing your application is being assessed by AI?
- How much does the existence of potential bias affect your understanding?

Simulation: AI in Hiring Practices

TechCorp, a leading technology company, is hosting a job fair to recruit for various positions. They've implemented a new AI-driven hiring process and are showcasing it at the fair. The AI system screens resumes, conducts initial assessments, and even performs preliminary interviews. However, there's been public debate about the fairness and ethical implications of this approach.

In your group, you will take on one of the roles below. The description for each role tells you the basic information about your goals and position. Additional information will give you some points to bring up in conversation.

- Use information from the video and this handout to support your positions.
- Engage in respectful dialogue, active listening, and consideration of various perspectives.
- Explore not just the challenges but also potential benefits and future implications of AI in hiring.

Roles:
- **Job Applicant(s)** (1-2 per group): You are recent graduates or job seekers with different backgrounds, applying for positions at TechCorp. Some of you have had positive experiences with the AI system, while others feel you were unfairly assessed or overlooked due to the automated process. Imagine that your resume has some of the characteristics below and has either been rejected or accepted for specific reasons. Try to push the HR Professional to defend the use of AI in hiring. There may also be some opportunity to express the benefits of AI to you as a job applicant when the Ethicist brings up concerns.
    - Reasons why AI might flag a resume to be rejected: Employment gaps; lack of specific keywords; overqualification; inconsistent work history; formatting issues; spelling and grammatical errors; lack of customization to specific job; short tenures at many jobs
    - One way AI determines suitability for a job is through the "Bag of Words" model. In this system, all the words in a document are counted and ranked for their frequency. The system looks for specific target words and their synonyms, and ranks documents higher or lower depending on these word lists.
- **Human Resources (HR) Professional(s)** from TechCorp (1-2 per group): You are responsible for implementing and overseeing the AI hiring system. You believe in its efficiency and defend its use, but you're also aware of the concerns and criticisms. Try to address the concerns of other group members when they are brought up.
    - The largest positive of the AI hiring system is efficiency. In the information age, companies frequently receive thousands of applicants for each position listed. In order to make timely hiring decisions, these resumes must be processed quickly.
    - AI can be more consistent in screening applicants, potentially reducing human biases that can occur in manual resume reviews.

- ○ Acknowledge that AI can reflect human biases, but work to encourage applicants and other concerned people that humans play an oversight role in making sure that the systems are not acting in a biased way.
- ○ Consider how you can calm fears of concerns with technology by stressing transparency and communication in the process.
- **AI Ethicist** (1 per group): You are an expert in AI ethics, invited to the job fair to provide an independent perspective. Your role is to highlight the ethical considerations and potential biases in AI hiring systems and suggest improvements.
  - ○ Concerns to bring up: The system may have unconscious biases based on human biases. This may inadvertently discriminate against certain demographics, undermining efforts toward diversifying the workplace. Algorithms can be difficult to understand, and may make decisions without explanation. Personal data may be collected in the process. The impersonal nature of AI in hiring might affect candidates' confidence in the company.
  - ○ Potential improvements to suggest: Regular auditing of the system to inspect for bias. Suggest using more diverse training data. Advocate for greater transparency. Suggest a way for applicants to provide feedback on their experiences.
- **Company Manager** from TechCorp (1 per group): You are a senior manager at TechCorp, enthusiastic about the AI system but also concerned about public perception and the company's responsibility to ensure fair hiring practices. Try to push the HR professionals to respond to questions about the image of AI in hiring. Also, work to alleviate the concerns of applicants and the AI ethicist.
  - ○ Positives: AI is able to help the company quickly identify the best talent. This improves their chances of hiring qualified individuals, and beat their competitors. It also makes hiring cheaper. AI can target specific strategic goals, which sets the company up for future success.
  - ○ Concerns: The manager is concerned about potential for bias and discrimination, and expects HR professionals to address those concerns. The manager also wants the process to be as transparent as possible, and wants applicants to feel they had a human connection. It would be unfortunate if applicants told other people that their experience with TechCorp was negative.

Video Script for Animator

Hello Young Innovators! Today we're discussing the ethics of AI in hiring practices.
Title screen

The modern job market is a competitive battlefield. With thousands of job applications flooding in for every position, recruiters are turning to technology for assistance.

[Socrat addresses viewer throughout video. In introduction, people walk past Help Wanted posters and look at them. Example image - https://c8.alamy.com/comp/D8B7WB/a-help-wanted-sign-for-a-delivery-person-posted-in-the-window-of-a-D8B7WB.jpg But there could be more posters, and have more modern job titles such as "Graphic Designer," "Web Designer," "Social Media Manager," etc]

Artificial Intelligence, or AI, is reshaping how we hire. Algorithms now scan resumes, assess qualifications, and even conduct initial interviews. What used to take human recruiters weeks to process, AI can handle in mere hours. But does this technology live up to its promise? Let's dive into the world of AI in hiring.

[People appear in front of a display with their resume, and are accepted or rejected based on specific phrases on the resume. Example image: https://oorwin.com/wp-content/uploads/2018/12/the-role-of-ai-in-recruitment.jpg]

Efficiency is at the heart of AI's appeal. By analyzing vast amounts of data quickly, AI ensures that the best candidates rise to the top. This means less time sifting through applications and more time focusing on the best fits.

[Robotic portal scanning many documents, while person can only look at one document at a time. Example images:
Robot on the left looks at multiple documents at once. - https://news.blr.com/app/uploads/sites/3/2021/03/AIhiring-5.jpg

Human working side by side with robot - Not necessarily this exact image, but the idea of having the human next to a technological device - https://media.licdn.com/dms/image/D4D12AQGy3u-dutThFA/article-cover_image-shrink_720_1280/0/1677660159386?e=2147483647&v=beta&t=szREULCEqeP5nBs7fSA32fdkNTKk0v9CYjLcqOuT9uA

Human looking at documents - https://images.pexels.com/photos/7129713/pexels-photo-7129713.jpeg]

Imagine an HR department where AI assists in everything from processing applications to scheduling interviews. Human recruiters can then spend more time on personal

interactions, creating a more tailored hiring process. But is it all as seamless as it sounds?

[Show visualizations of AI rapidly processing applications, pulling a person from a resume into an interview office]

While AI's efficiency is alluring, concerns arise around fairness and bias. AI learns from historical data, and if that data reflects societal biases, the AI might unknowingly perpetuate those biases.

[Images of a sequence of people who look exactly the same getting "hired" and brought into the company, and then a person who looks different being rejected]

What if previous hiring decisions favored one gender over another? Or one ethnicity? An AI system trained on that data might inadvertently develop similar preferences, leading to biased hiring decisions. These cases reveal the intricate nature of programming unbiased AI when our historical data is tainted with biases.
The question then arises: How can we harness AI's efficiency while mitigating biases? Companies can audit their AI, utilizing experts to identify and correct biases. Transparency in AI decision-making, alongside human oversight, can ensure a more balanced approach. Implementing diverse training data is also crucial to foster fairness.

[Zoom out to show that the previous process is now taking place on a screen, and a human and Socrat are watching the screen. Example image - https://media.gq.com/photos/5e617d866ad6c200080c3f7d/16:9/w_1839,h_1034,c_limit/gq%20march%202020%20Is%20my%20screen-based%20lifestyle%20ruining%20my%20vision?%20.jpg monitor could be slightly more turned toward the viewer, to show the process continuing, but when a specific person (who looks different) is Xed out, the human can click on the mouse and that person is then accepted.]

Beyond technical solutions, legal and ethical considerations must be part of the conversation. Various countries are examining how laws might govern AI in hiring to protect individual rights. Philosophical and moral questions about the human touch in recruitment continue to provoke thoughtful debate.

[Images of a world map with various locations highlighted. Icons such as documents, computers, gavels pop up over those countries.]

Public opinion is another essential factor. How do job seekers feel about being evaluated by a machine? Studies reveal mixed feelings, with some appreciating the efficiency and others concerned about dehumanization and fairness. Engaging with community stakeholders is vital for a well-rounded approach.

[Images of a group of people dressed for interviews, some smiling and some scowling.]

So what does the future hold for AI in hiring? As technology advances, we can expect more sophisticated systems that are better at recognizing and correcting biases. Collaboration between technologists, ethicists, lawmakers, and the broader community will shape this exciting frontier.

[Depiction of a board meeting around a table, with professional-looking people. Include one computer console. Example image - https://i.imgur.com/uJKMgXj.png except I picture the AI bot being on a monitor and occupying one of the positions at the table, rather than being in the middle of the table.]

AI in hiring practices offers a complex interplay of technology, efficiency, fairness, law, ethics, and societal values. The potential benefits are immense, but so are the challenges. As we continue to explore and innovate, the balance between these various elements will determine how AI serves not just businesses but all of humanity.

[Images of a line of people shaking hands with an HR manager type as they are welcomed to the job. Example image - https://media.istockphoto.com/id/1401557244/photo/hr-manager-handshaking-with-candidate-at-job-interview.jpg?s=612x612&w=0&k=20&c=BusS58RLOZnF4YM4vrtJcmtb3oezmKdxnPUL69LTdlU= - Although I picture them standing up rather than sitting down]

Let's discuss: How can the efficiency of AI in hiring practices be balanced with the need for fairness and avoiding biases?
[**Discussion Question**: How can the efficiency of AI in hiring practices be balanced with the need for fairness and avoiding biases?]

Question text appears on screen

Video Script for Narrations

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