

# AI Literacy Curriculum

## Lessons 3-4: Real-World AI and Ethics

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### LESSON 3: AI in Action - Real-World Applications Today

#### Learning Goals

By the end of this lesson, you will be able to:

- Identify how AI is transforming different industries
  - Understand the benefits and challenges AI brings to various fields
  - Evaluate the effectiveness of AI solutions in real situations
  - Think critically about where AI should and shouldn't be used
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#### Healthcare: AI as a Medical Assistant

##### How AI is Revolutionizing Medicine

**Medical Imaging: AI as a Super-Radiologist** AI can now look at X-rays, MRIs, and CT scans faster and sometimes more accurately than human doctors.

**Real Example:** Google's AI system can detect diabetic eye disease from photographs of the retina. In areas where eye specialists are rare, this AI helps catch problems early and prevents blindness.

**Drug Discovery: AI as a Research Speedster** Traditionally, creating a new medicine takes 10-15 years and costs billions. AI is cutting this time dramatically by:

- Predicting which chemicals might work as medicines
- Simulating how drugs interact with the body
- Identifying existing drugs that could treat new diseases

**Success Story:** During COVID-19, AI helped identify existing drugs that could be repurposed to fight the virus, potentially saving years of development time.

##### AI Healthcare Applications You Might Not Know About:

- **Symptom checkers** that help you decide if you need to see a doctor
- **Pill identification apps** that recognize medications from photos
- **Mental health chatbots** that provide 24/7 support

- **Fitness trackers** that monitor your health patterns
- **Telemedicine platforms** that help doctors diagnose remotely

## The Challenges:

- What happens when AI makes a wrong diagnosis?
  - Should patients be told when AI is involved in their care?
  - How do we ensure AI works equally well for all people, not just those it was trained on?
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## Transportation: The Road to Autonomous Vehicles

### Self-Driving Cars: How They "See"

#### The Sensors (AI's Eyes and Ears):

- **Cameras:** See lane lines, traffic lights, pedestrians
- **Radar:** Detects objects and measures distances
- **Lidar:** Creates 3D maps of surroundings
- **GPS:** Knows location and navigation routes

#### The AI Brain: Processes all this information in real-time to:

- Recognize objects (is that a child or a basketball?)
- Predict behavior (will that pedestrian step into the street?)
- Make decisions (should I brake, swerve, or continue?)
- Plan routes (what's the safest, fastest path?)

### Beyond Self-Driving Cars:

#### Traffic Management:

- Smart traffic lights that adjust timing based on real-time traffic
- Route optimization for delivery trucks
- Public transportation scheduling

#### Aviation:

- Autopilot systems (planes are already largely automated!)
- Air traffic control assistance
- Predictive maintenance for aircraft

## Shipping:

- Autonomous ships for cargo transport
- Route optimization for fuel efficiency
- Port automation for loading/unloading

## The Big Questions:

- If a self-driving car has to choose between hitting one person or five people, what should it choose?
  - Who's responsible when an autonomous vehicle causes an accident?
  - Will self-driving cars eliminate jobs for truck drivers, taxi drivers, and delivery workers?
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## Entertainment: AI as Creative Partner

### Recommendation Engines: Your Digital Taste-Maker

#### How Netflix Knows What You Want to Watch:

1. **Viewing History:** What you've watched, when you stopped, what you rewatched
2. **Ratings and Reviews:** What you liked or disliked
3. **Similar Users:** People with similar tastes who liked something you haven't seen
4. **Content Analysis:** AI analyzes the actual movies/shows for themes, genres, pacing
5. **Time and Device:** When and how you watch (phone vs TV, weeknight vs weekend)

**The Result:** A personalized homepage that's different for every user

### AI Creating Content:

#### Music:

- AI composers creating background music for videos
- Tools that help musicians generate new melodies
- Automatic mixing and mastering of recordings

#### Visual Art:

- AI generating artwork from text descriptions
- Photo enhancement and editing
- Creating graphics for games and movies

#### Writing:

- AI helping screenwriters with plot ideas
- Automated sports and financial news articles
- Creative writing assistants for authors

### **Gaming:**

- NPCs (non-player characters) that respond intelligently
- Procedurally generated game worlds
- AI opponents that adapt to your playing style

### **The Creative Controversy:**

- If AI creates a painting, who owns the copyright?
  - Will AI replace human artists and writers?
  - How do we value human creativity vs. AI-generated content?
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## **Business: AI as the Ultimate Employee**

### **Customer Service Revolution**

**Chatbots and Virtual Assistants:** Modern customer service bots can:

- Understand natural language (you don't need to use special commands)
- Access your account information and history
- Solve common problems instantly
- Know when to transfer you to a human agent

**Fraud Detection:** Banks use AI to spot suspicious transactions by:

- Learning your normal spending patterns
- Detecting unusual purchases (location, amount, type)
- Analyzing network patterns of known fraud
- Making instant decisions on whether to approve transactions

### **Supply Chain and Operations:**

#### **Inventory Management:**

- Predicting what products will be popular
- Optimizing stock levels to avoid shortages or excess

- Automating reordering processes

### **Predictive Maintenance:**

- Monitoring equipment to predict when it might break
- Scheduling maintenance before problems occur
- Reducing downtime and repair costs

### **Human Resources:**

- Screening job applications
- Scheduling interviews
- Analyzing employee satisfaction surveys

### **The Workplace Impact:**

- Which jobs will AI enhance vs. replace?
  - How can workers adapt to AI-augmented workplaces?
  - What new jobs will AI create?
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## **Education: AI as Personal Tutor**

### **Personalized Learning**

**Adaptive Learning Platforms:** These AI systems:

- Assess your current knowledge level
- Identify your learning style (visual, auditory, hands-on)
- Adjust the pace and difficulty of lessons
- Provide extra practice in areas where you struggle
- Suggest optimal study times based on your patterns

**Real Example:** Khan Academy's AI tutor can identify that you're struggling with fractions, provide additional practice problems, and suggest watching specific videos before moving to decimals.

### **AI Tools in Education:**

#### **For Students:**

- Grammar and writing assistants
- Research helpers that find relevant sources

- Language learning apps with speech recognition
- Study schedule optimizers

### **For Teachers:**

- Automated grading for multiple choice and short answers
- Plagiarism detection tools
- Student progress analytics
- Lesson plan generators

### **For Schools:**

- Predictive analytics to identify students at risk of dropping out
- Scheduling optimization for classes and resources
- Budget and resource allocation assistance

### **The Educational Debate:**

- Does AI help learning or create dependency?
  - How do we ensure AI doesn't widen educational inequalities?
  - What should students learn that AI can't do?
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## **Activity 1: AI Industry Deep Dive**

**Choose Your Industry:** Pick one field that interests you most:

- Healthcare
- Transportation
- Entertainment
- Business
- Education
- Agriculture
- Sports
- Fashion
- Environmental Science
- Criminal Justice

### **Research Mission (30 minutes):**

1. **Find 3 specific AI applications** currently being used in your chosen industry

2. **For each application, identify:**

- What problem is it solving?
- How does it work (in simple terms)?
- What are the benefits?
- What are the potential risks or downsides?
- Who benefits most from this AI?

### **Presentation Prep (15 minutes):**

Create a 2-minute presentation covering:

- One surprising way AI is used in this industry
  - One concern or challenge this creates
  - One prediction about how AI will change this field in the next 5 years
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## **Activity 2: AI Solution Design Challenge**

**The Scenario:** Your school wants to use AI to solve a real problem. Working in teams, you'll propose an AI solution.

### **Step 1: Problem Identification**

Choose ONE school problem to solve:

- Students struggling with time management
- Cafeteria food waste
- Bullying detection and prevention
- Optimizing bus routes
- Helping students choose classes
- Improving library resources
- Energy efficiency in school buildings

### **Step 2: AI Solution Design**

For your chosen problem, design an AI system that includes:

**Data Collection:**

- What information would your AI need?
- How would it collect this data?
- What privacy concerns need to be addressed?

### **AI Functionality:**

- What would your AI actually do?
- How would it learn and improve over time?
- What decisions would it make automatically vs. recommend to humans?

### **Implementation:**

- Who would use this system?
- What would the user interface look like?
- How would you measure if it's working?

## **Step 3: Evaluation**

### **Benefits Analysis:**

- Who benefits from your solution?
- What problems does it solve?
- What improvements would it create?

### **Risk Assessment:**

- What could go wrong?
- Who might be negatively affected?
- What safeguards would you include?

## **Step 4: Pitch Preparation**

Create a 5-minute pitch that includes:

- Problem statement and why it matters
  - Your AI solution explained simply
  - Expected benefits and how you'd measure success
  - Acknowledgment of risks and how you'd address them
  - Implementation timeline and cost estimate
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## Activity 3: AI Success Story Analysis

### Case Study: AI in Agriculture

Read this scenario and answer the questions:

*Blue River Technology created an AI system called "See & Spray" that helps farmers reduce pesticide use. The AI uses computer vision to identify weeds versus crops in real-time as a tractor moves through fields. Instead of spraying entire fields with pesticides, the system only sprays the specific spots where weeds are growing.*

*Results: Farmers reduced pesticide use by up to 90%, saved money on chemicals, reduced environmental impact, and maintained crop yields.*

### Analysis Questions:

#### Technical Understanding:

1. What type of AI learning do you think this system uses? (Supervised, unsupervised, or reinforcement?)
2. What data would this AI need to learn the difference between weeds and crops?
3. Why might this be challenging for AI to do accurately?

**Impact Assessment:** 4. List all the stakeholders (people/groups affected) by this technology. 5. How does each stakeholder benefit or potentially lose from this innovation? 6. What could go wrong with this system, and how serious would the consequences be?

**Broader Implications:** 7. How might this technology change farming as a profession? 8. Could similar AI systems be applied to other industries? Give examples. 9. What questions would you ask before deciding whether to invest in this technology?

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## LESSON 4: The Good, The Bad, and The Biased - AI Ethics

### Learning Goals

By the end of this lesson, you will be able to:

- Identify major ethical concerns in AI development and use
  - Understand how bias gets into AI systems and why it matters
  - Analyze real-world cases of AI ethical dilemmas
  - Develop frameworks for making ethical decisions about AI
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## The Big Ethical Questions

Before we dive into specific issues, consider these fundamental questions that don't have easy answers:

1. **Should AI systems be allowed to make decisions that significantly affect people's lives?**
2. **Who is responsible when an AI system causes harm?**
3. **How do we balance the benefits of AI with privacy and human autonomy?**
4. **What rights do people have regarding AI systems that affect them?**

Keep these questions in mind as we explore specific ethical challenges.

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## The Bias Problem: When AI Isn't Fair

### What is Algorithmic Bias?

**Simple Definition:** When AI systems consistently make unfair or discriminatory decisions against certain groups of people.

**Why This Happens:** Bias in AI comes from three main sources:

1. **Biased Training Data:** The data used to train AI reflects historical discrimination
2. **Biased Design Choices:** The people building the AI unconsciously build in their own biases
3. **Biased Implementation:** How the AI is deployed and used in the real world

### Real-World Examples of AI Bias

**Case 1: Hiring Algorithms** *The Problem:* Amazon developed an AI system to screen job resumes. The AI was trained on 10 years of resumes from people who were hired. Since tech jobs historically went mostly to men, the AI learned to prefer male candidates.

*The Result:* The system automatically downgraded resumes that included words like "women's" (as in "women's chess club captain") and favored candidates who went to all-male schools.

*The Lesson:* Training data that reflects past discrimination will perpetuate that discrimination.

**Case 2: Facial Recognition** *The Problem:* Many facial recognition systems work much better on white faces than on Black faces, and better on male faces than female faces.

*The Cause:* Training datasets contained mostly photos of white men, so the AI became expert at distinguishing between white male faces but poor at recognizing other groups.

*The Impact:* This has led to false arrests, security systems that don't work for all employees, and exclusion from services.

**Case 3: Healthcare AI** *The Problem:* An AI system used to prioritize patient care consistently gave lower risk scores to Black patients than white patients with the same health conditions.

*The Cause:* The AI was trained to predict healthcare costs, not health needs. Since Black patients historically received less expensive care (due to systemic inequalities), the AI learned to associate race with lower costs, not lower health risks.

*The Result:* Sick Black patients were less likely to be identified as needing care.

## Why Bias Matters More in AI

**Scale:** AI systems can make millions of decisions instantly, spreading bias at an unprecedented scale.

**Invisibility:** Unlike human bias, AI bias is hidden in code and algorithms that most people can't examine.

**Authority:** People often trust computer decisions more than human decisions, assuming they're "objective."

**Persistence:** Once bias is built into an AI system, it continues making biased decisions until someone fixes it.

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## Privacy: The Data Dilemma

### How Much Do AI Systems Know About You?

#### Data Collection is Everywhere:

- Your web browsing history
- Location data from your phone
- Purchase history and financial information
- Social media posts and interactions
- Photos and videos (including those you didn't post)
- Voice recordings from smart devices
- Health and fitness data
- Educational records and test scores

## The Privacy Paradox

**The Trade-off:** More personal data usually means better AI services:

- More accurate recommendations
- More personalized experiences
- Better security and fraud detection
- More convenient automation

### **But at what cost?**

- Loss of privacy and anonymity
- Potential for surveillance and control
- Risk of data breaches
- Manipulation through targeted content

## **Real Examples of Privacy Concerns**

**Case 1: Smart Home Devices** Voice assistants like Alexa and Google Home are always listening for their wake words. Sometimes they accidentally record private conversations and send them to others or store them permanently.

**Case 2: Social Media Algorithms** Platforms like TikTok and Instagram know so much about your preferences that they can predict your mood, political views, and even mental health status from your activity patterns.

**Case 3: Predictive Policing** Some police departments use AI to predict where crimes might occur. This can help prevent crime, but it can also lead to over-policing of certain neighborhoods, creating a feedback loop of bias.

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## **Accountability: Who's Responsible When AI Goes Wrong?**

### **The Responsibility Chain**

When an AI system causes harm, who should be held accountable?

**The Developer:** The company or person who built the AI system **The Data Provider:** Whoever provided the training data **The User:** The person or organization using the AI system **The Regulator:** Government agencies that approved or failed to regulate the AI **The Victim:** Sometimes people blame themselves when AI systems fail them

## **Real-World Accountability Challenges**

### **Self-Driving Car Accidents:**

- If an autonomous vehicle hits someone, is it the car manufacturer's fault? The software company's? The owner's? The city's for poor road design?
- Current laws weren't written with AI in mind, creating legal gray areas

### **Medical AI Errors:**

- If an AI misdiagnoses a patient, is the doctor still responsible for the final decision?
- What if the doctor trusted the AI and didn't double-check?
- Should patients be informed when AI is involved in their diagnosis?

### **Loan Approval Algorithms:**

- If an AI unfairly denies someone a loan, who can they appeal to?
  - Banks often can't explain exactly why their AI made a decision
  - Is "the computer said no" an acceptable explanation?
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## **High-Stakes AI: When the Consequences Matter Most**

### **Areas Where AI Ethics Are Critical**

#### **Criminal Justice:**

- **Risk Assessment:** AI helps judges decide on bail, sentencing, and parole
- **Predictive Policing:** AI predicts where crimes might occur
- **Facial Recognition:** Police use AI to identify suspects

#### **Healthcare:**

- **Diagnosis and Treatment:** AI helps doctors make medical decisions
- **Drug Development:** AI designs and tests new medications
- **Resource Allocation:** AI helps decide who gets organs for transplant

#### **Education:**

- **Admissions:** AI helps colleges decide who gets accepted
- **Grading:** AI evaluates student work and performance
- **Career Guidance:** AI suggests academic and career paths

#### **Employment:**

- **Hiring:** AI screens resumes and conducts initial interviews

- **Performance Review:** AI monitors and evaluates employee work
- **Workplace Surveillance:** AI tracks productivity and behavior

## The Stakes Are Real

**Example: COMPAS (Criminal Risk Assessment)** This AI system is used across the US to help judges make decisions about bail, sentencing, and parole. It predicts the likelihood that someone will commit another crime.

**The Problem:** Investigative journalists found that the system was twice as likely to incorrectly flag Black defendants as "high risk" compared to white defendants.

**The Impact:** People's freedom and future opportunities depend on these algorithmic decisions.

**The Debate:** Even if the system is somewhat biased, is it still better than human judges who might be even more biased?

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## Activity 1: Bias Detection Challenge

### Scenario Analysis

For each scenario below, identify potential sources of bias and suggest solutions:

**Scenario 1: College Admissions AI** An AI system helps a university select which students to admit. It's trained on data from the past 20 years of admissions decisions.

*Questions to Consider:*

- What biases might exist in the historical admissions data?
- How might this AI perpetuate or amplify existing inequalities?
- What data should be included or excluded from the training?
- How could the university test for bias in their system?

**Scenario 2: Job Interview AI** A company uses AI to conduct initial video interviews, analyzing candidates' word choice, tone of voice, and facial expressions to predict job performance.

*Questions to Consider:*

- What cultural biases might this system have?
- How might it discriminate against people with disabilities?
- What if English isn't the candidate's first language?
- How might unconscious biases of the AI developers affect the system?

**Scenario 3: Healthcare Chatbot** A medical AI chatbot provides health advice and decides whether to recommend seeing a doctor. It's trained on medical literature and patient data from a major hospital system.

*Questions to Consider:*

- Whose health experiences are represented in the training data?
- How might this AI work differently for different demographic groups?
- What are the consequences if the AI gives wrong advice?
- How should the AI handle sensitive topics like mental health or reproductive health?

## **Bias Mitigation Strategies**

For each scenario, propose specific solutions:

1. **Data Improvements:** How could the training data be made more representative?
  2. **Testing Protocols:** How would you test the system for bias before deployment?
  3. **Ongoing Monitoring:** How would you continue checking for bias after the system is in use?
  4. **Human Oversight:** What role should humans play in these AI decisions?
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## **Activity 2: Ethical Decision-Making Framework**

### **The Ethical AI Checklist**

When evaluating an AI system, ask these questions:

#### **1. Fairness and Non-Discrimination**

- Does this AI treat all groups of people fairly?
- Are there any groups who might be systematically disadvantaged?
- How do we measure and ensure fairness?

#### **2. Transparency and Explainability**

- Can people understand how the AI makes decisions?
- Are people informed when AI is being used to make decisions about them?
- Can decisions be appealed or challenged?

#### **3. Privacy and Data Protection**

- What personal data does this AI collect and use?

- Do people consent to this data use?
- How is sensitive information protected?

#### 4. Human Agency and Oversight

- Do humans maintain meaningful control over important decisions?
- Can people opt out of AI-based decisions?
- Is there human oversight of the AI system?

#### 5. Safety and Reliability

- How do we know this AI system works correctly?
- What happens when it makes mistakes?
- Are there safeguards against misuse?

### Practice Exercise: Apply the Framework

#### Case Study: AI-Powered Social Credit System

*Imagine a city wants to implement an AI system that tracks citizens' behavior (jaywalking, littering, paying bills on time, volunteering) and assigns everyone a "social credit score." People with high scores get benefits like faster loan approvals and priority for school admissions. Those with low scores face restrictions.*

**Your Task:** Use the ethical framework above to evaluate this system.

For each of the 5 categories:

1. Identify specific concerns
2. Rate the system (Ethical/Questionable/Unethical) for that category
3. Suggest modifications that could address the concerns
4. Give an overall recommendation: Should this system be implemented?

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### Activity 3: Design Ethical AI Principles

#### Create Guidelines for Your Organization

**Scenario:** You've been asked to create ethical AI principles for one of these organizations:

- Your school district
- A local hospital
- A social media company



- A city government
- A bank

## Step 1: Identify AI Use Cases

List 5 ways your chosen organization currently uses or might use AI:

- What decisions does the AI help make?
- Who is affected by these decisions?
- What data does the AI use?

## Step 2: Stakeholder Analysis

Identify who has interests in how AI is used:

- **Primary Users:** Who directly interacts with the AI?
- **Affected Parties:** Who is impacted by AI decisions?
- **Decision Makers:** Who controls how AI is implemented?
- **Broader Community:** Who else cares about this AI use?

## Step 3: Draft Principles

Create 5-7 principles that should guide AI use in your organization. For each principle:

- Write a clear, one-sentence statement
- Explain what it means in practice
- Give an example of how it would be applied

**Example Principle:** *Statement:* "AI systems must be transparent and explainable to affected individuals."

*In Practice:* People have the right to understand how AI decisions that affect them are made. *Example:* If AI is used to grade essays, students should be able to see what criteria the AI used and why they received their specific score.

## Step 4: Implementation Plan

For each principle, describe:

- How you would measure compliance
  - What training staff would need
  - What oversight mechanisms you'd establish
  - How you'd handle violations
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## **Critical Thinking: Difficult Ethical Dilemmas**

### **Dilemma 1: The Self-Driving Car**

A self-driving car's AI must choose between two bad options:

- **Option A:** Swerve and hit one person on the sidewalk
- **Option B:** Continue straight and hit five people crossing the street

*Questions:*

- How should the AI be programmed to decide?
- Should the car prioritize its passengers over pedestrians?
- Should age, health, or social status factor into the decision?
- Who should make these programming choices?

### **Dilemma 2: The Hiring Algorithm**

A company's AI hiring system is very accurate at predicting job performance but shows slight bias against certain demographic groups.

*The Data:*

- Overall, the AI makes better hiring decisions than human recruiters
- The bias is small but measurable and consistent
- Removing the bias would make the AI less accurate overall

*Questions:*

- Should the company use this AI system?
- Is a slightly biased but more accurate system better than human bias?
- How much accuracy would you give up to eliminate bias?
- What if the AI helps more people from underrepresented groups overall, despite the bias?

### **Dilemma 3: The Surveillance Dilemma**

A city wants to use AI-powered surveillance to prevent terrorism and crime.

*The Proposal:*

- Cameras with facial recognition throughout the city
- AI analysis of "suspicious behavior"

- Automatic alerts to police for potential threats

#### *The Trade-off:*

- Could prevent terrorist attacks and serious crimes
- Would eliminate privacy in public spaces
- Might disproportionately target certain communities
- Could be misused by future governments

#### *Questions:*

- Is this surveillance justified if it saves lives?
  - What safeguards would make this acceptable?
  - Should citizens vote on whether to implement this system?
  - How do we balance security and privacy?
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## **Real-World Case Studies**

### **Case Study 1: Microsoft's Tay Chatbot (2016)**

**What Happened:** Microsoft released Tay, an AI chatbot designed to learn from conversations with Twitter users. Within 24 hours, internet trolls had taught Tay to post offensive and hateful content. Microsoft quickly shut down the bot.

#### **Lessons Learned:**

- AI systems can be deliberately manipulated
- Learning from user interactions can be dangerous without safeguards
- Public AI releases need extensive testing and monitoring

#### **Discussion Questions:**

- How could Microsoft have prevented this outcome?
- What does this say about the challenge of AI safety?
- Should companies be held responsible for how others misuse their AI?

### **Case Study 2: Facebook's Emotional Contagion Study (2014)**

**What Happened:** Facebook secretly manipulated the news feeds of 689,000 users to see if showing more positive or negative content would affect users' own posts. They found that emotions were "contagious" through social media.

## The Controversy:

- Users weren't informed they were part of an experiment
- The study potentially affected people's mental health
- Facebook argued their terms of service allowed this research

## Discussion Questions:

- Is it ethical to experiment on users without explicit consent?
- Should social media companies be allowed to manipulate what users see?
- How do we balance research benefits with user rights?

## Case Study 3: Amazon's Same-Day Delivery Discrimination (2016)

**What Happened:** Reporters discovered that Amazon's same-day delivery service was unavailable in many predominantly Black neighborhoods, even when they were surrounded by areas that had the service.

**Amazon's Response:** They claimed the algorithm optimized for efficiency and profitability, not race. The patterns were an unintended consequence of economic factors.

## The Debate:

- Is it discrimination if the intent wasn't to discriminate?
  - Should companies be required to ensure equal service regardless of profitability?
  - How do we address algorithmic outcomes that perpetuate systemic inequalities?
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## Activity 4: Ethical Impact Assessment

### Assess a Real AI System

**Choose one of these AI systems to evaluate:**

- TikTok's recommendation algorithm
- Tesla's Autopilot system
- Amazon's Alexa voice assistant
- Google's search algorithm
- Snapchat's face filters

### Research Phase (20 minutes)

Find information about your chosen system:

- How does it work?
- What data does it collect?
- What decisions does it make?
- Have there been any controversies or problems?

## **Ethical Analysis**

Use this template to evaluate your chosen system:

### **Positive Impacts:**

- Who benefits from this AI system?
- What problems does it solve?
- How does it improve people's lives?

### **Negative Impacts:**

- Who might be harmed by this system?
- What are the potential risks or downsides?
- Are any groups disproportionately affected?

### **Ethical Concerns:**

- Privacy: What personal data is collected and how is it used?
- Bias: Could this system discriminate against certain groups?
- Transparency: Do users understand how the system works?
- Autonomy: Do people have control over how the AI affects them?
- Accountability: Who is responsible when things go wrong?

### **Recommendations:**

- What changes would make this system more ethical?
- What regulations or oversight might be needed?
- How could users better protect themselves?

## **Present Your Findings**

Create a 3-minute presentation covering:

- Brief explanation of how the AI system works
  - One major benefit and one major concern
  - One specific recommendation for improvement
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## **Moving Forward: Your Role in Ethical AI**

### **What You Can Do Right Now**

#### **As an AI User:**

- Read privacy policies and terms of service
- Adjust your privacy settings on apps and devices
- Think critically about AI recommendations and decisions
- Support companies that prioritize ethical AI development

#### **As a Citizen:**

- Stay informed about AI developments in your community
- Participate in public discussions about AI regulation
- Contact elected officials about AI policies that matter to you
- Vote for leaders who take AI ethics seriously

#### **As a Future Professional:**

- Consider how AI might impact your future career
- Learn about ethical considerations in your field of interest
- Advocate for responsible AI use in your workplace
- Develop skills that complement rather than compete with AI

### **Questions for Ongoing Reflection**

1. **How has learning about AI ethics changed your perspective on technology you use daily?**
  2. **What's one AI system you interact with that you want to understand better?**
  3. **If you were designing an AI system, what would be your top priority: accuracy, fairness, privacy, or transparency? Why?**
  4. **How do you think society should balance the benefits of AI with protecting individual rights?**
  5. **What questions about AI ethics do you still have?**
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## Key Takeaways from Lessons 3-4

By now, you should understand that:

- ✓ **AI is transforming every industry** and creating both opportunities and challenges
  - ✓ **AI systems can perpetuate and amplify human biases** in ways that are difficult to detect and fix
  - ✓ **Privacy and AI advancement often conflict** - better AI usually requires more personal data
  - ✓ **Accountability for AI decisions is complex** - it's often unclear who is responsible when AI goes wrong
  - ✓ **Ethical AI design requires deliberate effort** - fairness and responsibility don't happen automatically
  - ✓ **Everyone has a role** in ensuring AI is developed and used ethically
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## Extend Your Learning

### Explore These Resources:

- **"Weapons of Math Destruction" by Cathy O'Neil** - How algorithms affect our daily lives
- **AI Now Institute Reports** - Research on AI's social implications
- **Partnership on AI** - Industry collaboration on AI ethics
- **MIT Technology Review's AI section** - Latest developments and analysis

### Try These Activities:

- Audit your own digital footprint - what data have you shared with AI systems?
- Research AI use in your local government or school district
- Join online discussions about AI ethics and policy
- Consider how AI might impact your future career plans

**Coming Next:** In Lessons 5-6, we'll get hands-on with AI tools and explore how AI is changing society, jobs, and power structures.