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Code and Order: AI and Predictive Policing

Why?

This lesson is about the complex and increasingly relevant topic of AI in law enforcement. By exploring the use of AI in policing, students will gain insights into the benefits and challenges of integrating advanced technology into critical societal functions. This lesson fosters critical thinking and ethical reasoning, and encourages students to consider the broader implications of technological advancements on civil liberties, privacy, and community relations. As citizens and future decision-makers, students will be better equipped to engage in informed discussions and make thoughtful contributions to conversations about technology's role in society.

Materials Needed	Time needed
• (Optional) Printed handouts for students to read • Computer to display video	• Approximately 30 - 45 minutes

Objectives

- Students will be able to analyze the principles and functioning of predictive policing, distinguishing how AI algorithms are used to forecast criminal activities.
- Students will be able to propose solutions or improvements to current predictive policing practices, focusing on enhancing fairness, transparency, and community trust.
- Students will be able to engage in collaborative discussions, demonstrating the ability to listen, understand, and respect diverse viewpoints on the use of AI in policing.

Key Concepts & Vocabulary

- **Predictive Policing**: The use of data analysis and algorithms to anticipate where and when crimes are likely to occur, and who might be involved, for the purpose of preventing crime.
- **Data Bias**: The presence of prejudicial, often unfair, influences within the data. In the context of predictive policing, it refers to historical biases in crime data that can affect the outcomes of AI algorithms.
- **Transparency**: In AI and predictive policing, it refers to the openness and clarity about how AI systems operate, how decisions are made, and how data is used.
- **Hot Spots**: Locations identified by predictive policing algorithms as having a higher likelihood of criminal activity.

Lesson Components

1. **Before You Watch**: Connect lesson to background knowledge of AI and predictive policing and get students' attention

2. **Video**: Show the pedagogy.cloud video explaining the ethical considerations in the topic of predictive policing
3. **Case Study**: Detail a real-world scenario that relates to the issue of AI and predictive policing
4. **Simulation**: Lead students through an interactive activity exploring possible ethical considerations
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 Poll: Conduct a quick poll in the class with questions like, “Do you think computers can predict crime?”, “Should police use AI to prevent crimes?”, and “Can AI in policing be completely fair?” Use the responses to gauge students' preconceptions. Ask students to picture AI used in predicting crimes. Have them ponder what it would be like, and how it would work. Ask students to describe the picture they see.

While You Watch: Mention these topics and questions for students to look out for as they watch the video:

- When you see the robot cop analyzing data, describe its appearance and the tools or equipment it seems to be using.
- Note down any ethical concerns or issues mentioned in the video related to predictive policing. What makes these issues a matter of ethics?
- When the video discusses data bias, identify an example given that illustrates this concept.

2. Video Summary

The video explores the concept of predictive policing using AI, in which computers analyze extensive data, such as past crimes and social media, to forecast and prevent future criminal activities. It highlights the benefits, such as efficient resource allocation, and raises ethical concerns about data bias, privacy, and trust between police and communities. The potential for people to “game the system” and the lack of algorithmic transparency are also discussed. The video concludes by emphasizing the need for balance between AI benefits in policing and protecting individual rights, advocating for unbiased AI usage, public awareness, and responsible technology implementation.

3. Case Study

Distribute or read Case Study handout.
Summary: In Rivertown, a mid-sized town with relatively low crime rates, the implementation of an AI-based predictive policing system sparked debates about safety, privacy, and fairness. Concerns included the accuracy of AI predictions, potential bias in historical crime data, privacy issues, and the impact on community-police trust. In response, Rivertown adopted a balanced approach, integrating the AI system with traditional methods and engaging in community

discussions, despite initial skepticism and concerns about transparency and data misuse.

4. Simulation

Through this simulation, students will learn about the multifaceted issues surrounding predictive policing, including ethical considerations, community impacts, and the role of technology in law enforcement.

Scenario
The medium-sized town of Rivertown has recently implemented a predictive policing system. While the police department claims it has reduced crime, some community members are raising concerns about privacy, bias, and the impact on community-police relations. A community meeting is called to discuss the future of this program in Rivertown.

Roles
Select students for three groups in the role play scenario. About half of the students in the class should be assigned to groups. Ask students to volunteer, or assign them to groups. (The remaining students should serve as community members.)

Police Representatives (Students A): Argue in favor of predictive policing, focusing on its potential benefits in crime reduction and resource allocation.
Community Advocates (Students B): Express concerns about privacy, potential bias, and the negative impact on certain communities.
Technology Experts (Students C): Provide a neutral perspective on how predictive policing works, its capabilities, and limitations.

The moderator (teacher or student) facilitates the discussion, ensuring equal opportunities for each group to present their views.

Tasks

- Preparation: Give time for each group to research their perspective, preparing key points and potential rebuttals.
    - Teacher can print out and provide the Simulation Handout, which offers a variety of basic perspectives on the topic.
    - Alternately, students can be given time to do internet research on the topic, and how their role would respond to it.
- Discussion Round: The moderator poses questions, and each group responds, followed by a brief open-floor discussion.
    - Questions:
        - What concerns exist about the potential impact of predictive policing on individual privacy and civil liberties, especially in marginalized communities?
        - How might bias might be present in the data used for predictive policing, and what measures can be implemented to reduce this

bias?
    - How might predictive policing affect the relationship between the police department and the community, and what can be done to build trust?
    - How comfortable are you, in these roles, with predictive policing in Rivertown? What, if anything, would make you more comfortable?
    - How transparent is the predictive policing system about its decision-making process, and how can this transparency be improved?
    - What alternatives to predictive policing could be considered to ensure both effective law enforcement and the protection of civil rights?
- Community Feedback: Students not in roles A, B, or C act as general community members, asking questions or expressing opinions.
- Each group should prepare a closing statement in which they summarize their overall opinions and make their appeal to the community.
    - What should happen in Rivertown? Why is this option better than other options?

5. Discussion

These questions are designed to be used in whole-class discussion. Ask questions that relate most effectively to the lesson.

1. How did it feel to represent your assigned role? Did it change your perspective on predictive policing?
2. How can a balance be struck between using technology for public safety and protecting individual rights?
3. Based on what you've learned, what recommendations would you make to a real town considering predictive policing?
4. What argument was made that you hadn't considered before?
5. What do you think would be the impact on community relations with police?

6. Assessment

Exit Ticket: Provide a prompt for students to reflect on their learning, such as:

- What did you learn about the complexities of implementing technology like predictive policing in a community?
- What do you see as the biggest negative of predictive policing? Why? Could it be improved?

Sources to Learn More

- An overview of the ethical issues related to predictive policing - https://thesecuritydistillery.org/all-articles/ethics-artificial-intelligence-and-predictive-policing
- Resource Router, a current app used for predictive policing - https://www.soundthinking.com/law-enforcement/resource-deployment-resour

cerouter/

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Case Study: Predictive Policing in Rivertown

Rivertown is a mid-sized town, known for its friendly community and low crime rates. Recently, the Rivertown Police Department (RPD) decided to implement an AI-based predictive policing system. The goal was to make Rivertown safer by predicting where crimes might occur and stopping them before they happen. This decision sparked a debate among the townspeople, with some supporting it for increased safety, and others worried about privacy and fairness.

- **Accuracy**: What if the AI predicts a high crime rate in an area where crimes rarely happen? This could lead to unnecessary police presence, making residents feel uncomfortable and unfairly watched.
- **Fairness**: The AI uses past crime data for its predictions. But what if this data is biased? For example, if certain neighborhoods were over-policed in the past, the AI might unfairly target them again, even if they're now safe and peaceful.
- **Privacy**: Predictive policing involves gathering a lot of data, including personal information. This makes people worry about their privacy. What if this information is misused or falls into the wrong hands?
- **Community Relations**: Some residents (and police) feel that predictive policing could harm trust in the RPD. Residents fear being treated as suspects just because they live in a certain area.

Solution and Community Response

To address these challenges, different solutions were proposed, including transparency in data collection, community involvement, regular audits of the system, balancing predictive policing with traditional methods, and instituting strict data privacy methods.

Rivertown chose to adopt a balanced approach, combining predictive policing technology with traditional methods. They held community meetings to discuss the use of the technology and gather feedback. The citizens were initially skeptical, worrying about unfair targeting and lost privacy. Some were concerned with the use of historical data to make predictions. Others wanted to see more transparency in the prediction algorithms. To this, the police chief replied, “If the algorithms were totally transparent, then anyone could figure out how to beat them, and crime rates would go way up.”

Questions

- How would you feel if your neighborhood was frequently flagged by the AI as a high-crime area?
- What measures would make you more comfortable with the use of predictive policing in your community?

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Simulation Activity

The points below are intended to provide a basic overview of the issue of predictive policing. If desired, distribute these points to students. Alternatively, students could do their own internet research.

Role A: Police Representatives

- The technology is intended to complement traditional policing methods, not replace them.
- The use of AI in crime prediction enhances the efficiency and effectiveness of resource allocation within the police department. Data analysis time can be reduced dramatically.
- Software algorithms reduce gaps in patrol coverage and send people to the right places at the right times.
- Analyzing historical crime data is a key aspect of understanding and preventing future criminal activities.
- The police department adheres to strict guidelines to ensure responsible use of predictive policing methods.
- Algorithms need to be difficult to access, because otherwise people could figure them out and avoid detection.

Role B: Community Advocates

- Citizens may report feeling unfairly targeted by the predictive policing program.
- Increased surveillance and patrolling in minority communities have been linked to predictive policing, raising concerns of fairness.
- The decision-making process of AI algorithms lacks transparency, causing unease among community members.
- Use of historical crime data may strengthen biases in law enforcement practices.
- The introduction of predictive policing has led to concerns over reduced privacy and increased suspicion among residents.
- Community-based initiatives and direct engagement are viewed as potentially more effective alternatives to predictive policing.

Role C: Technology Experts

- Predictive policing algorithms function by analyzing large datasets to identify patterns and potential crime hotspots.
- Bias inherent in the data can influence the AI's predictions, prompting scrutiny.
- The complexity of algorithms and proprietary nature of technology make transparency in algorithmic processes a challenge.
- Ensuring the AI system's accuracy and unbiased nature requires regular audits and updates.
- The effectiveness of predictive policing is highly dependent on the quality and breadth of the data used.
- Technology in law enforcement is best utilized as an aid to human decision-making, not as a replacement.

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Video Script for Animator

Hello Young Innovators! Today we're discussing the ethics of predictive policing with AI.
Title screen

Imagine if we could predict where crimes might happen before they occur. Sounds like science fiction, right? But it's happening right now with AI.

Socrat narrating throughout, facing toward viewer.
Behind Socrat is a robot, wearing a police hat, analyzing data on a large holographic map, highlighting different areas of a city. (Example - https://i.imgur.com/wUayTxq.png)

In many cities, police departments use AI algorithms to analyze huge amounts of data, like where and when past crimes occurred. This helps them predict and prevent future crimes. It's like a weather forecast, but for crime!

Shift to a room with several monitors on the wall. The robot cop is viewing screens with data streams flowing into a computer and transforming into a predictive heat map of a city. (Example - https://i.imgur.com/nlduZM7.png)

How does it work? These AI systems sift through data like crime reports, social media, and even weather patterns. They look for patterns that humans might miss, helping police decide where to focus their efforts.

Images such as social media app icons, weather symbols, and people emojis flowing from the monitors into the head of the robot cop. (Example - https://i.imgur.com/6d3cpQn.png)

Police forces in some big cities have used predictive policing apps for several years. The programs predict "hot spots" of crime, and police officers were sent to those areas to patrol more often. This approach aimed to reduce crime rates.

Display a map of Los Angeles with "hot spots" lighting up, and animated police cars moving towards those areas. (Example - https://i.imgur.com/5W11KOt.png)

But here's where it gets tricky. These AI systems can raise some big ethical questions. What if the data is biased? For instance, if a neighborhood was over-policed in the past, the AI might unfairly target it again.

Shift to a neighborhood scene. People walking along a street. Cars driving by. Five police officers walk into the scene and look around. (Ideally all people in scene represent a variety of races and ages.) (Example - https://i.imgur.com/xipma49.png)

Also, there are privacy concerns. Collecting all this data might mean snooping into people's lives more than we're comfortable with. And what about the trust between police and communities? Too much surveillance could make people feel like they're always being watched.

As police walk around, other people in the scene turn away and quickly leave. One window opens, someone looks out, sees the police, and the window shuts again. (Example - https://i.imgur.com/0PYyqB6.png)

Another worry for police is the possibility of people “gaming the system.” This means individuals could figure out how the AI works and change their behavior to avoid detection. It's a bit like learning the patterns in a video game to beat it. This could make predictive policing less effective.

One police officer walks through, and a prototypical robber wearing a ski mask (preferably a white-skinned robber) sneaks in behind him as he leaves. (Example - https://i.imgur.com/L0InZf7.png)

One more challenge is that these algorithms often aren't transparent. That means it's not always clear how they make their predictions. This can happen because the AI's programming is complex, or because companies want to protect their technology secrets. It's like having a recipe for a secret sauce but not knowing all the ingredients.

A computer and monitor, and the monitor is showing an image of a robot cop’s head, wearing a police hat. Citizens of the city are trying to look inside, and the monitor beeps and glows red, indicating that they can’t access data. (Example - https://i.imgur.com/CG8IF9n.png)

Now, some people think predictive policing can make our streets safer and help police work more efficiently. Others worry it could lead to a future where computers make big decisions about our lives, sometimes unfairly.

Split the screen showing one side with a peaceful, safe neighborhood, and the other with residents holding signs in protest.

So, what's the solution? Well, it's not easy. We need to balance the benefits of using AI in policing with protecting our rights and freedoms. This means having clear rules, making sure the AI isn't biased, and keeping the public informed.

Illustrate a group of diverse animated characters, such as police officer, female businessperson, and computer engineer, discussing at a round table with an illustration of the robotic police officer in the center. (Example - https://i.imgur.com/xTrdUaH.png)

To sum up, predictive policing with AI is a powerful tool, but it comes with big responsibilities. It's up to us to decide how to use this technology in a way that's fair, respectful, and keeps everyone safe. Remember, the future is in our hands, or circuits in my case! Keep questioning, keep learning, and let's build a world we all want to live in.

Socrat standing in a futuristic, harmonious city, with people and police officers smiling at each other and interacting peacefully. Socrat waves to a couple of them. (Example - https://i.imgur.com/EdWyS3a.png)

Let’s discuss: What are the key challenges we must address in order to responsibly implement AI in predictive policing?
Question: What are the key challenges we must address in order to responsibly implement AI in predictive policing? [Display on screen at end of video]

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Video Script for Narrations

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