## Case Exploration

Choose one of the following cases to read about. Then answer the questions below.

- Cambridge Analytica and Facebook (Political microtargeting using personal data)  
- Strava Heatmap revealing military base locations  
- Re-identification of Netflix viewing data  
- Use of facial recognition in public health monitoring

1. What happened in the case you chose?

2. What data was collected, and how was it used?

3. Were users aware their data was being collected/used this way?

4. What was the outcome or consequence of this case?

5. What lessons should we learn about data privacy from this situation?

Be ready to share a brief summary of your thoughts and findings with the class.

Would You Deploy This Model?

Objective: Explore ethical considerations in machine learning applications for public health. You’ll evaluate real-world case studies and decide whether or not to deploy a proposed ML model.

## Case Studies

### 🔹 Case 1: Mental Health Prediction App

A startup develops an app to predict depression by analyzing passive data (text messages, phone usage, and geolocation) from teenagers' phones. Schools are interested in using it to screen for mental health risk.  
  
Discussion Questions:  
- Was informed consent obtained?  
- Could this data be misused?  
- How might bias affect predictions for different groups?

### 🔹 Case 2: Diabetes Risk Model

A hospital uses a model to predict future diabetes risk. It performs worse for Hispanic patients due to limited training data. A researcher suggests delaying deployment until better data is collected.  
  
Discussion Questions:  
- Is it ethical to delay rollout for everyone?  
- Is it ethical to deploy a less accurate model for some groups?

### 🔹 Case 3: Outbreak Surveillance from Social Media

A public health agency scrapes public posts from Twitter to detect early signs of a flu outbreak. The data is anonymized, but location info is still included.  
  
Discussion Questions:  
- Is it ethical to use this data without consent?  
- What privacy risks exist even with anonymized data?  
- Who benefits—and who could be harmed?

**AI in Public Health: Current Events Exploration**

**Instructions:** Choose a recent news article or website that describes a real-world application of AI in public health. This could be related to disease prediction, outbreak response, diagnostics, personalized medicine, health behavior change, etc. Answer the following questions using details from the article and your own research. Be prepared to share your findings with the class.

1. What is the title of the article or website you chose? Provide the link.
2. What public health problem is being addressed? Describe the background briefly.
3. What kind of AI method or technology is used? (e.g., machine learning, natural language processing, image recognition)
4. Who developed or implemented the AI system? (organization, government, company, etc.)
5. How is the AI system being used in practice?
6. What data is it using? (e.g., electronic health records, social media, wearable devices)
7. What are the benefits or goals of this AI application?
8. What are potential ethical concerns or risks related to this use of AI?
9. Who benefits from this technology? Are there any groups who might be disadvantaged?
10. What do you think should be done to improve or monitor this use of AI in public health?

Be ready to summarize your article in a few minutes and reflect on what role AI should play in the future of public health.