# video 3: data + AI

**Facial Recognition Systems**

* What is a facial recognition?
* When and where is facial recognition used?
* What are some everyday products that use facial recognition? In what ways are these products inaccurate and biased?

Examples from the video:

1. Google image search results for professional vs unprofessional hair (Alexander 2016).
2. Amazon’s Rekognition has difficulty recognizing gender and black and brown skin but makes no errors in recognizing the gender of light skinned men (see: Buolamwini and Gebru 2018)
3. Two computer store employees test the camera inside of an HP laptop (2009). The camera can track the white employee, but it cannot track the black employee.

**Emotion Recognition Systems**

* When and where is emotion recognition used?
* Who defines emotion? Is it universally expressed?
* What makes emotion recognition fallible?

Emotion recognition systems use facial recognition to analyze emotions. This exact labelling for emotions comes from a system called the Facial Action Coding System (FACS), which is the backbone to most emotion recognition systems today. The FACS system itself stems from a hypothesis that posits there are six universal emotions - anger, disgust, fear, happiness, sadness and surprise – and that these emotions can be expressed and detected across all cultures (see: Hjortsjol 1969; Ekman, Friesen and Hager 2002). For instance, who defines what is angry? What does angry look like? Angry, according to the system, means lowered eyebrows, pressed lips, bulging eyes.

It’s not that the software is wrong or incorrect in recognizing our emotions; it’s that the premise is mistaken to assume that we are all able to move and exist in society and express our emotions in a one-to-one way.

**Surveillance and Predictive Policing**

* What are the long-term consequences of using inaccurate AI systems, like facial recognition?

Recognition systems are used to make assumptions about the world using pre-existing data. It’s crucial to consider how these systems will be placed within society to enact different forms of surveillance.

“[Predictive policing](https://leb.fbi.gov/2013/april/predictive-policing-using-technology-to-reduce-crime)” (listed as one of TIME Magazine’s [50 best](https://en.wikipedia.org/wiki/Predictive_policing#cite_note-4) inventions of 2011) is an early example of such a feedback loop. The idea is to use machine learning to allocate police resources to likely crime spots. Believing in machine learning’s objectivity, several US states implemented this policing approach. However, many noticed that the system was learning from previous data. If police were patrolling black neighborhoods more than white neighborhoods, this would lead to more arrests of black people; the system then learns that arrests are more likely in black neighborhoods, leading to [reinforcement](https://rd.springer.com/article/10.1007%2Fs11292-016-9272-0) of the original human bias. It does not result in optimal policing with respect to actual incidence of crime.” (Agüera y Arcas, Mitchell & Todorov 2017)

**References**

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**Recommended:**

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