Algorithmic Equity Toolkit

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FBI, ICE find state driver’s license photos are a gold mine for facial-recognition searches

A cache of records shared with The Washington Post reveals that agents are scanning millions of Americans’ faces without their knowledge or consent.
Facial recognition software mistook 1 in 5 California lawmakers for criminals, says ACLU

Machine Bias
There’s software used across the country to predict future criminals. And it’s biased against blacks.

by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica
May 23, 2016

Civil rights activists up in arms over Amazon update adding fear detection to facial recognition tech
What are surveillance and automated decision systems (ADS)?

**Surveillance**
 *(e.g. collection of drivers license photos)*

Surveillance systems collect data about the mass population.

**Automated Decision Systems (ADS)**
 *(e.g. facial recognition software)*

Use the collected data to make decisions.
Up Next:

Daniella Raz
2019 DSSG Fellow

On related legislation and stakeholders
WA Legislation HB 1654 & 1655

- Managing facial recognition and automated decision systems
Toolkit

Interactive Web Demo

ID Guide

Questionnaire
Participatory Design Timeline

- Meetings with Densho, ACLU, CAIR
- Prototyping
- Surveys/feedback from Densho and a civil rights activist
- Prototyping
- Surveys and feedback from ACLU and a civil rights activist
- Prototyping
- Surveys and feedback from CAIR
- Prototyping
- Diverse Voices Panels
- Final revisions
Participatory Design

- Accuracy -> Data scientists
- Usefulness and Clarity -> Civil rights advocates
What is your level of familiarity with automated decision systems/artificial intelligence? How would you define an automated decision systems/artificial intelligence?

6 responses

<table>
<thead>
<tr>
<th>Low level. Use a neural network for img processing, system that uses an algorithm to determine responses given an input.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very little familiarity. Honestly not sure how to define these terms, but perhaps systems that collect/compile data and make decisions based on that data with little/no human oversight.</td>
</tr>
<tr>
<td>Somewhat familiar. ADS/AI are software systems that rely largely an infrastructure of generated algorithms primarily derived from machine-learning approaches, rather than the traditional explicit logic written by human programmers.</td>
</tr>
<tr>
<td>Not too familiar. I'd define it as technology that is capable of learning, without any person reprogramming it</td>
</tr>
<tr>
<td>Machine learning. AI slowly learns by probing, trying things, and maintaining relevant knowledge. It's my understanding that IBM's Watson is often used</td>
</tr>
<tr>
<td>Basic understanding. I know more about how these broadly relate to social justice issues. To my understanding, these systems use data to provide results/answers/etc</td>
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</tbody>
</table>
How comfortable would you feel testifying on government use of a new automated decision system/artificial intelligence?

6 responses

How comfortable would you feel testifying on government use of a new automated decision systems/artificial intelligence after reviewing this toolkit?

6 responses
What additional questions do you have about automated decision systems/artificial intelligence?

3 responses

What regulations are there on artificial intelligence systems right now? Think people assume that gov't is more interested in regulation than they actually are.

What laws exist to regulate the use of AI (ie, one example mentioned that Amazon recommends a 95% confidence interval when using its facial recognition tool, but there is no law dictating that law enforcement can only make decisions if the CI is reached)? To what extent should AI be used if it's so imperfect? In what situations is human judgment more accurate and in what situations is AI more accurate? How can you make AI less biased, and can that be programmed or will it have to be human judgment

none
Toolkit: Interactive Web Demo

Interactive Web Demo

ID Guide

Questionnaire
Fixing inaccuracies does not solve the problem
facial recognition technology would only contribute to this issue. Speaking specifically on the use of facial recognition technology to target undocumented immigrants, Mora-Villalpando emphasizes, "We believe that Amazon is harming our communities if they continue with their push of selling this software [facial recognition] to ICE."

**Current subject**

- LeBron James
- Lisa Leslie
- Paris Hilton
- Jennifer Lopez
- Aaron Petrus
- Jacqueline Edwards
- Kalipane Chana
- Jason Campbell
- Katie Cours
- Vicki Zhao Wei

**Threshold:** You have selected a minimum similarity score to qualify for a match as "0."

**Case Studies:**

ICE Uses Facial Recognition To Sift State Driver’s License Record: In July of 2019, researchers at Georgetown University Law Center found that Immigration and Customs Enforcement (ICE) agents mined millions of driver license photographs in search of facial recognition matches to target undocumented migrants who have legally obtained driver licenses. ICE did this illegally, as they did not have congressional approval to access DMV databases of driver license photos. In this manner, the use of facial recognition technology played an illegal role, and transparent role in the use of the facial recognition software.
Toolkit: ID Guide

Interactive Web Demo

ID Guide

Questionnaire
Identifying a Surveillance Tool or Automated Decision System (ADS)

What data type(s) does the tool or system use?*

- Sounds
- Images & Video
- Text & Other Digital Data
- Location

Surveillance Tool Examples
- Microphone
- Camera
- Public Records
- GPS

ADS Examples
- Gunshot Detector
- Facial Recognition
- Social Media Surveillance
- Predictive Policing

What does the ADS example do with the data?*

- Groups similar gunshot sounds by gun type
- Matches similar facial images
- Groups people with similar characteristics
- Predicts a crime risk score

ADS Function Examples
- Classification
- Clustering
- Regression

If the tool or system only collects, records, or stores data then it is a **Surveillance Tool**. A surveillance tool is any electronic device, software program, or hosted software solution that is designed to be used for the purpose of surveillance.

*Note: the data types, ADS examples, and functions in this guide are not exhaustive, and some tools may use a combination of different data types or ADS functions.

If the tool or system also performs any of these functions with the data then it is an **Automated Decision System**. An ADS is a computerized implementation of algorithms which are used to assist in making decisions.
Gunshot detection

Background: Gunshot detectors recognize the sound of gunfire and can pinpoint its location. Originally developed in the mid-1990s, early gunshot detection tools quickly

How it uses classification: The gunshot detector algorithm uses a “training dataset” of
Toolkit: Questionnaire

Interactive Web Demo

ID Guide

Questionnaire
Up Next:

Vivian Guetler
2019 DSSG Fellow

On questionnaire component & harms
Use Case Example: How Law Enforcement Uses Facial Recognition Software

Use case scenario: You have attended a meeting held by the police officials about the use of facial recognition technology. Law enforcement mainly use facial recognition technologies for two purposes: Facial verification, to confirm someone’s identity, and Facial identification, to identify an unknown face. They then tell you how they perform facial identification for different tasks using facial recognition software.

Types of Face Identification

Stop & Identify
On patrol, an officer can take a photo of someone who refuses or cannot identify themselves, then compare the photo to their facial recognition database. The photo is also added to the database.

 Arrest & Identify
When a person is arrested, their mug shot is taken. The mug shot is then added to the facial recognition database and shared with other agencies such as the FBI.

Real-time video surveillance
When police are looking for an individual, they upload the image of that person to a "Wanted". A facial recognition system then runs images taken from live feed cameras and compares it to the wanted list. Everyone walking past the security cameras is subjected to the process.

Sample questions you can ask the officials about facial recognition software:

- Impact: who is most likely to be affected by the use of this technology; what are the effects?
- Appropriate Use: what is the primary use of the facial recognition tool; is the technology compatible for its intended use?
- Transparency & Accountability: is there information about the data used for the facial recognition software? how was the software’s algorithm designed? who should be held accountable? what are the accuracy rates for age, gender, and race?
THANK YOU!

Any questions?

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