



# Intelligence Led Policing in the Age of Artificial Intelligence

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# Structure

1. Introduction – the use of ML & DL in law enforcement
2. The promises of AI
3. The caveats of AI
4. Rethinking AI

# The use of ML/DL applications in law enforcement



Use of ML/DL is broad, multimodal and complex

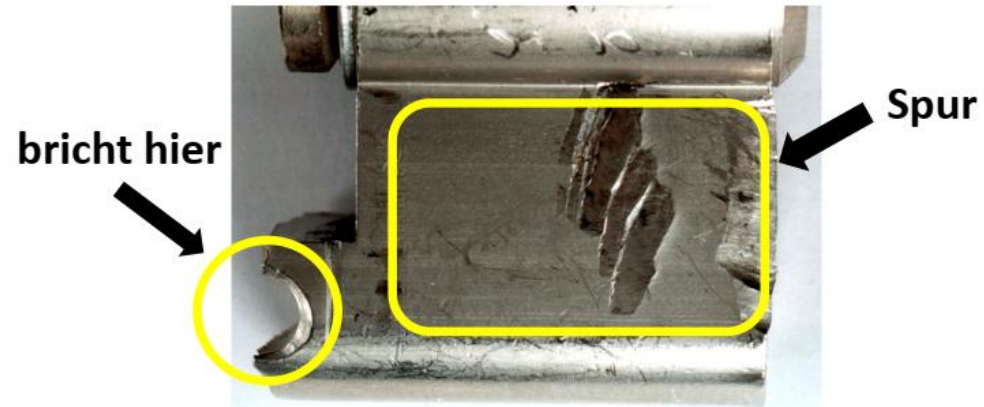
Examples:

- Predictive Policing
- Facial Recognition
- Crime Scene Analysis
- Analysis of patterns, flows of criminal activities, modus operandi
- Perimeter Protection
- etc

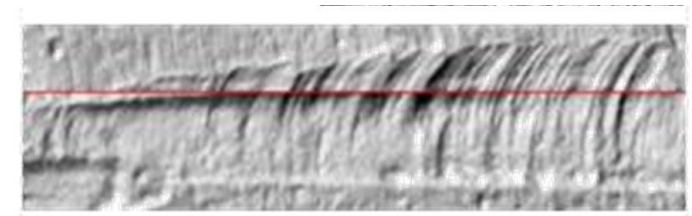
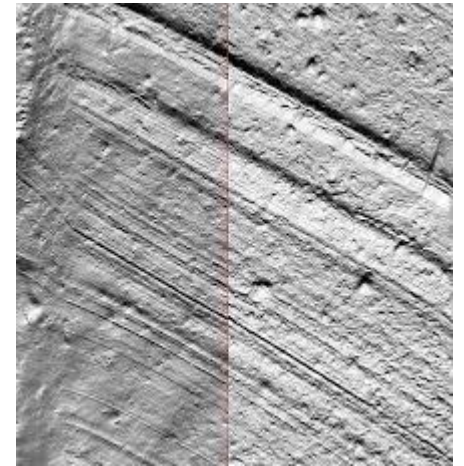
# Crime Scene Analysis



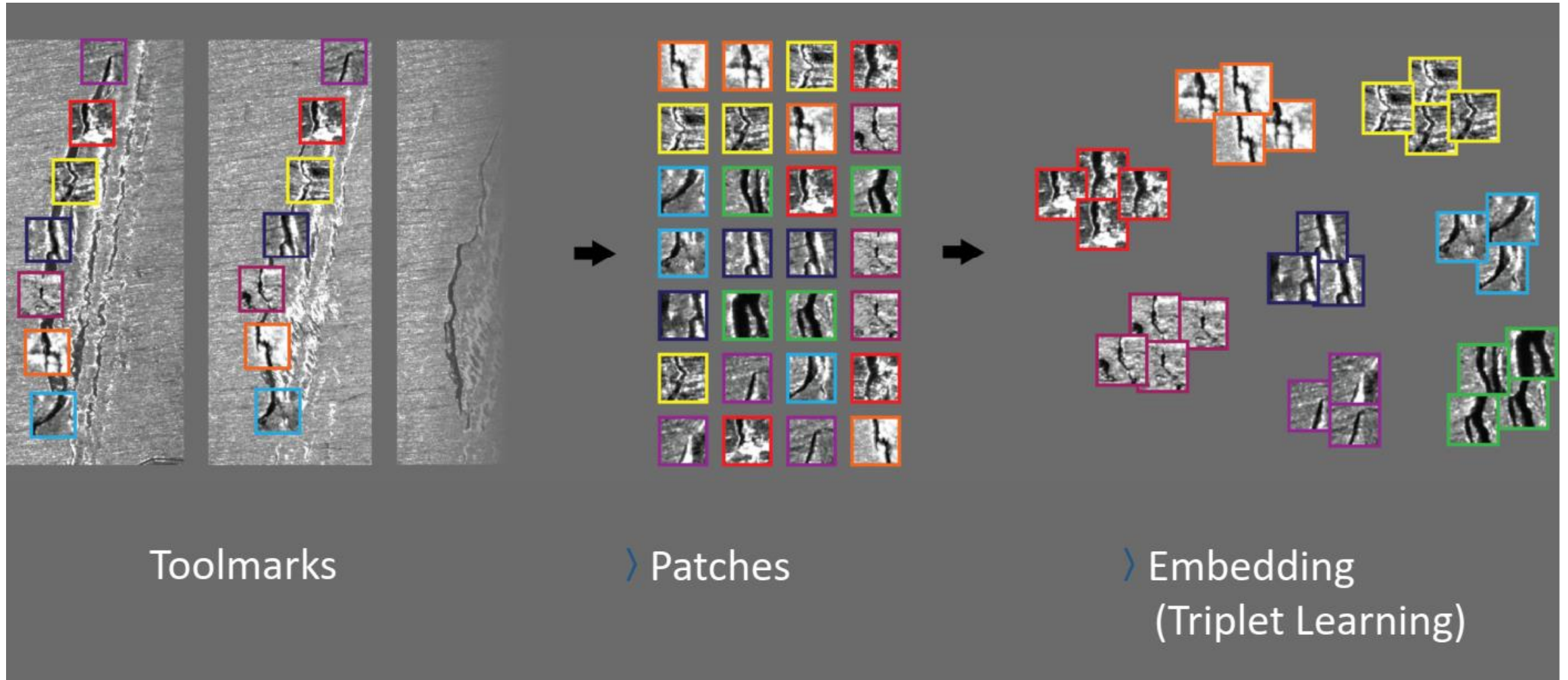
Vorher



Nacher



# Crime Scene Analysis





# The promise of AI

The introduction of AI-tools are always heavily driven by expectations and imaginations:

Increase in Performance (Time)

Increase of Efficiency (Money)

Pre-emptive crimefighting (Future)



# The caveats

Data & Theory

Technology

Practices

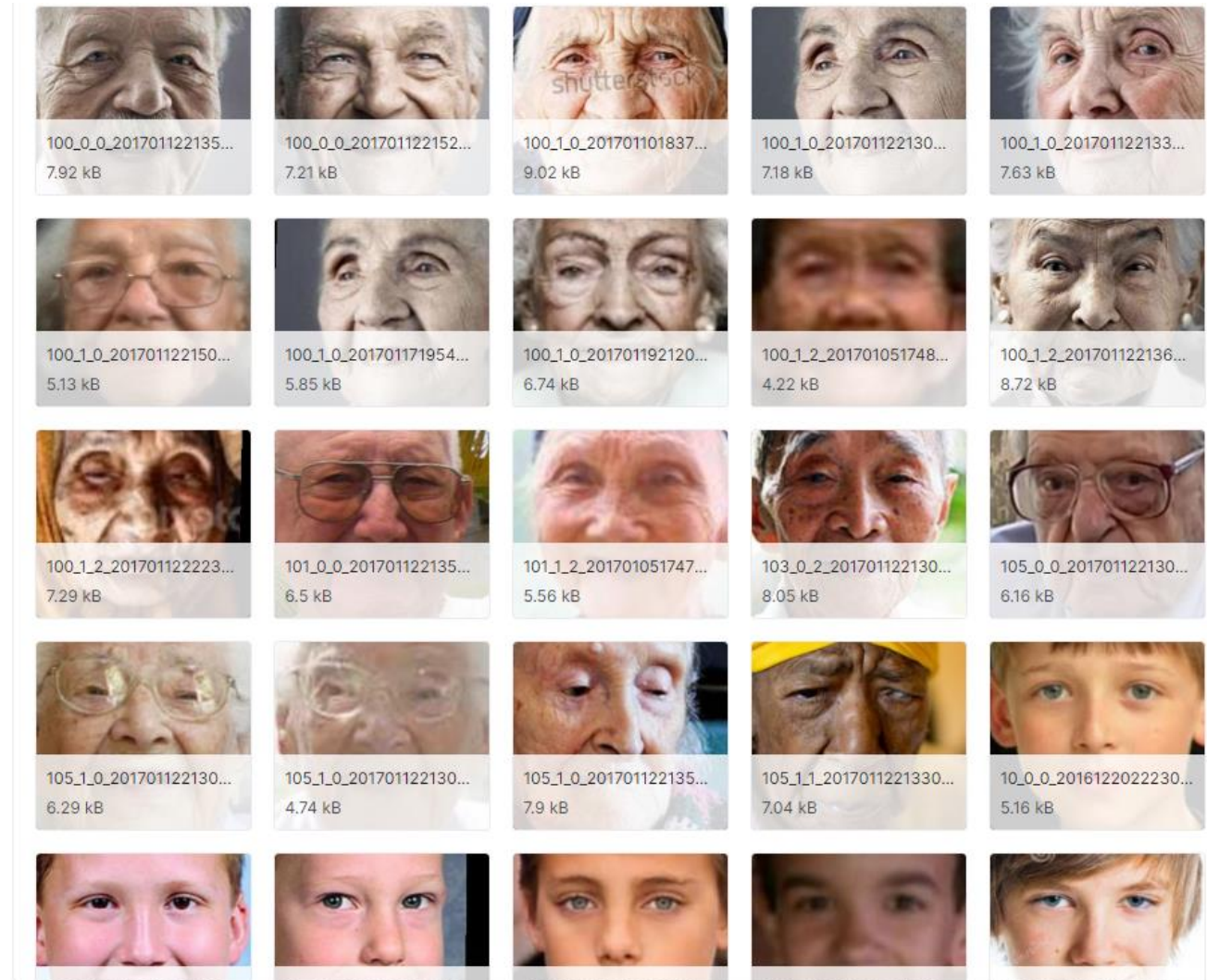
# Data: UKTFace dataset

Example of the UKTFace Database:

- 23.705 labeled pictures
- Faces of people aged between 0-116
- Used to train facial recognition
- Labels: Age (ranged 0-116), Gender (0=male; 1=female), race (white, black, asian, indian and others (e.g. Hispanic, Latino, Middle Eastern))

Source:

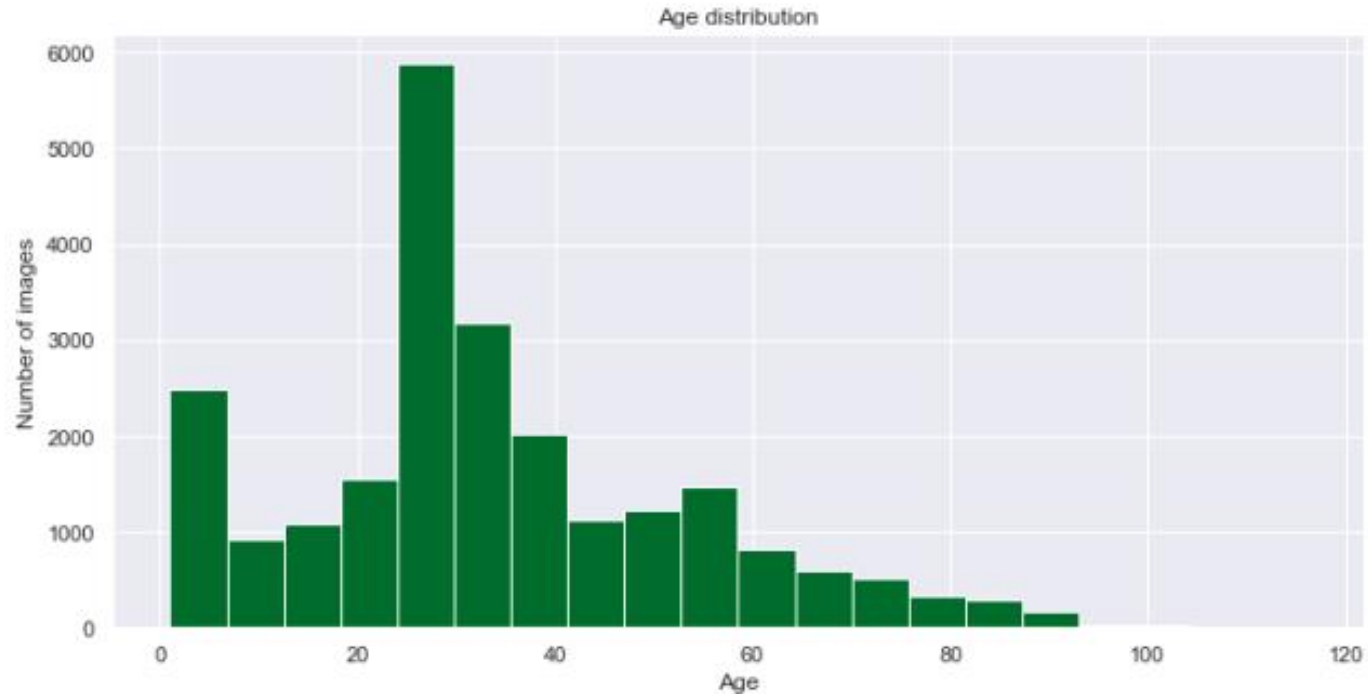
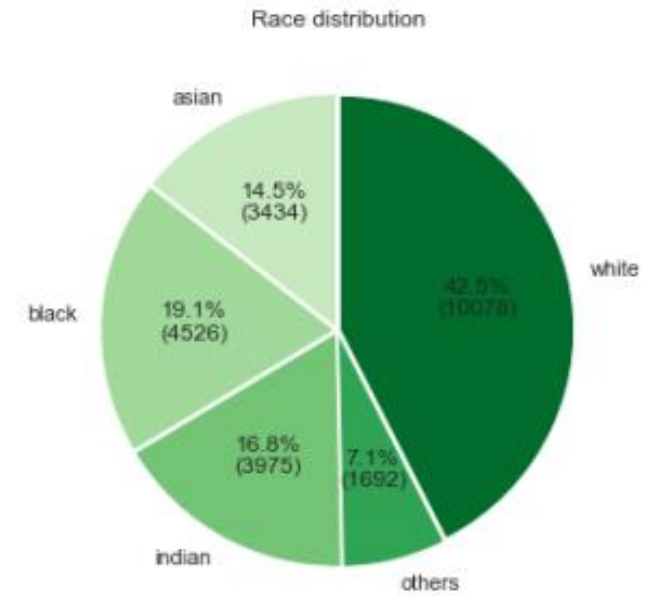
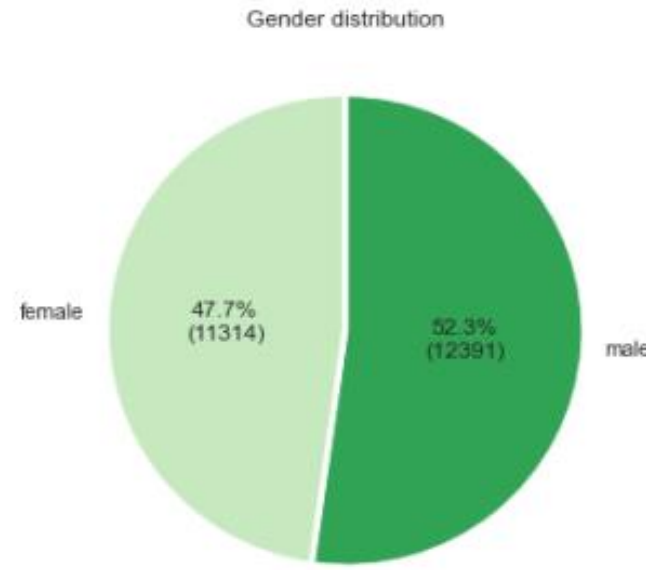
[www.kaggle.com/datasets/jangedoo/utkface-new](http://www.kaggle.com/datasets/jangedoo/utkface-new)





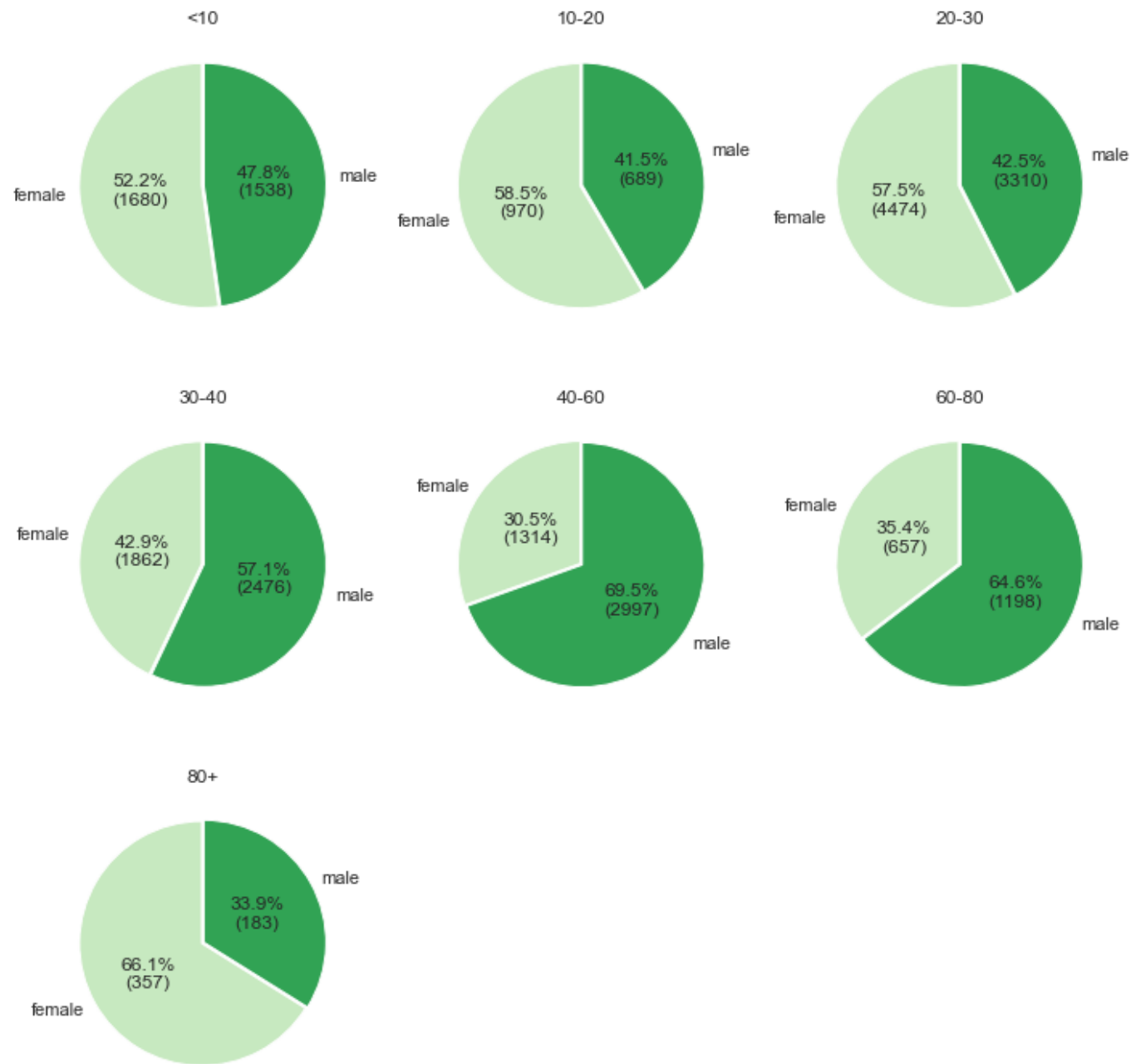
Example of the UTKFace Database:

- 23,705 labeled pictures
- Faces of people aged between 0-116
- Used to train facial recognition
- Labels: Age (ranged 0-116), Gender (0=male; 1=female), race (white, black, asian, indian and others (e.g. Hispanic, Latino, Middle Eastern))



Analysis of the UTKFace database:

- Skewed distribution between populations, particularly when labels are combined
- Attribution of labels are also questionable





# Theory

## Affect-recognition tools:

- Recognition of emotions (fear, happiness, anger, etc) in Facial Recognition
- Risk Classification Models
- Affect recognition is based on highly disputed research done by Paul Ekman in the 1960es and 1970es – with no real evidence of success
- Now used/experienced with in ML-applications

# Technology

Adapting Crime Scenes to be machine readable





# Practices

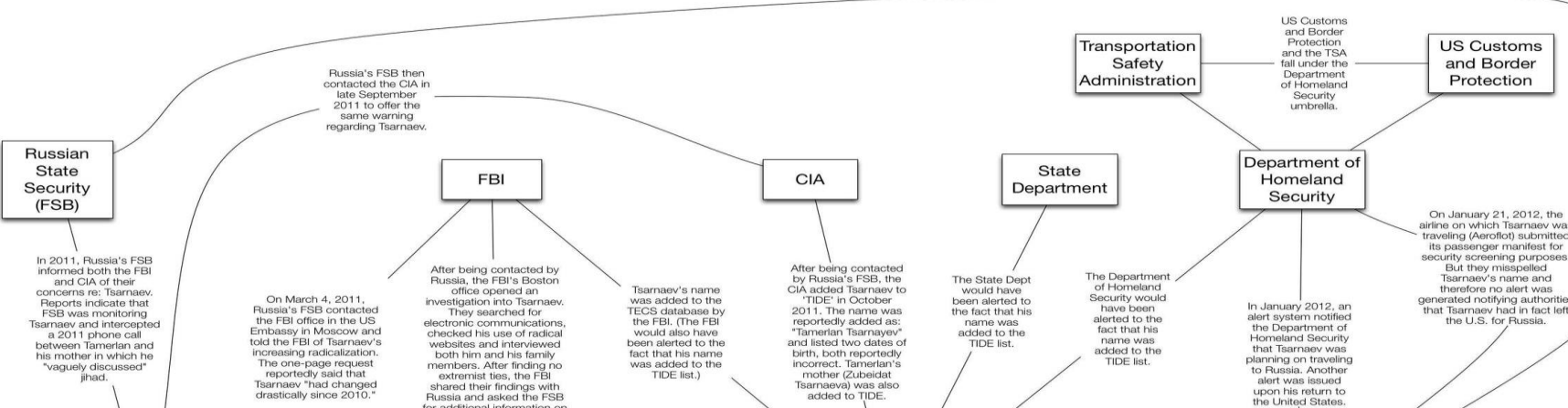
- Incorporating technologies into law enforcement practices
- Data overflow: “drowned in a data lake”
- Interoperability and Infrastructures
- Low performance of technology

# TAMERLAN TSARNAEV

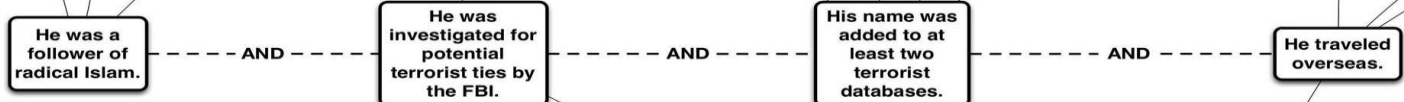
## WHAT WE THINK WE KNOW ABOUT WHO KNEW WHAT AND WHEN

Tamerlan Tsarnaev is suspected of having been the mastermind behind the Boston Marathon Bombings. He died on April 19, 2013. What was known about his activities in the years leading up to the Boston attack will be the subject of intense scrutiny going forward.

### WHAT FEDERAL AGENCIES KNEW



### WHAT THERE WAS TO KNOW



### THE LISTS HE WAS ON:

**TIDE**  
 TIDE stands for Terrorism Identification Datamart Environment. The database contains (depending on who you ask) over 700,000 names or partial names. TIDE is compiled by the National Counterterrorism Center, an interagency effort formed in 2004 to facilitate the sharing of information between agencies. Tsarnaev's name was added to the database at the request of the CIA. The name of his mother (Zubeidat Tsarnaeva) was also added. TIDE files are used by the FBI to compile its "watch lists."

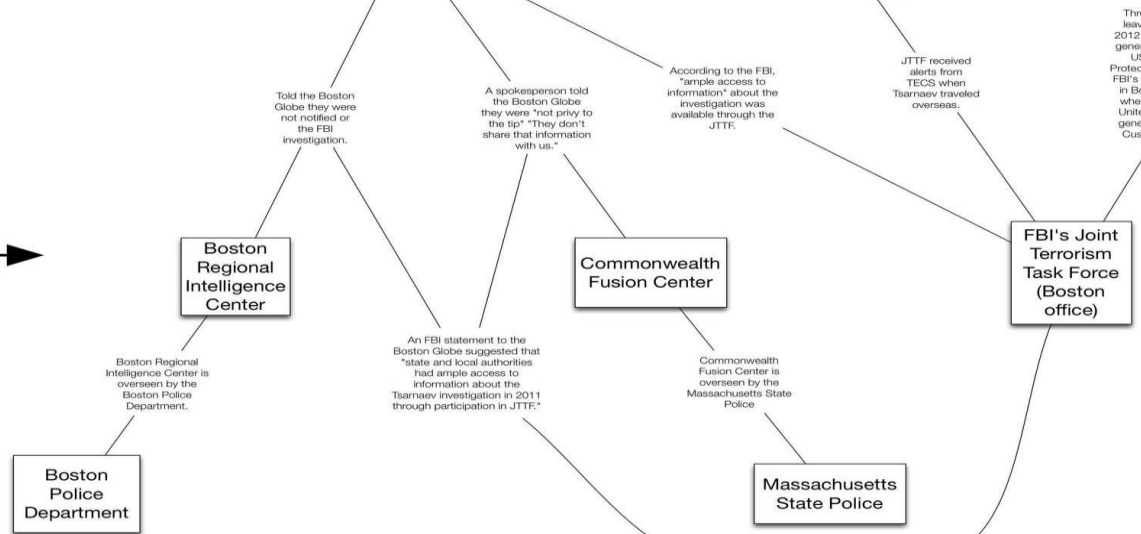
**TECS**  
 The TECS system is an information sharing platform maintained by US Customs and Border Protection under the umbrella of the Department of Homeland Security. Tsarnaev's name was added to TECS as a result of the FBI investigation.

### THE LISTS HE WAS NOT ON:

**FBI's Terrorist Screening Database**  
 By law, this database includes "only individuals who are known or reasonably suspected to be or have been engaged in conduct constituting, in preparation for, in aid of, or related to terrorism." Officials have told media outlets that information about Tsarnaev never prompted his name to be elevated from the TIDE database to a terrorist watch list.

**No-Fly List**  
 The No-Fly list is maintained by the Department of Homeland Security (Transportation Safety Administration) and reportedly contains about 10,000 names.

### WHAT LOCAL LAW ENFORCEMENT KNEW



**INVESTIGATING WHAT (IF ANYTHING) WENT WRONG.**  
 President Obama has asked the National Counter-Terrorism Center to review what agencies knew, and when. In the meantime, before we know much of anything, expect grandstanding galore from anyone in Congress who thinks they have any chance at all to get any kind of traction by pretending to know.



# Rethinking AI

“AI is neither *artificial* nor *intelligent*” (K. Crawford)

- ML/DL applications as one component in the techno-social assemblage
- Embedded in practices
- Relying on past data to “predict” the future

→ AI as a means to assist crime fighting and prevention



Thank you!

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