AI in criminal matters:
Towards a better prediction of crime?
|
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Use of AI/machine learning tools:

- **By the police**
- **By the judge**

Pros and cons?

AI outperforming the police and the judge?

Use of AI by the police: better investigation of crime

> **Recognition of patterns in huge volumes of data (ex:financial transactions: Connect, UK)**
> **Vocal / picture recognition (ex: INTERPOL ICSE database)**
> **Facial recognition (London police, UK)**

Depending on applications:
Pros: effectiveness
Cons: invasion of privacy
Possible abuses?

of Justice   de la justice

Use of AI by the police: prevent crime

➢ **Predictive policing or « Hotspots » mapping**
➢ **Only some types of crime**

Pros: good effectiveness rates (10 times more likely to predict crime location than normal patrolling); dissuasive effect in the surroundings
Cons: self-fulfillling prophecies and oversurveillance
« Tyranny » of the algorithm?

Prediction Map in 2011

PredPol predictions provide clear recommendations about where and when to deploy precious police resources to suppress gun violence.

Zones of Chicago flagged, corresponding to the percentage of homicides predicted.

10%   13%   20%

www.predpol.com

PREDPOL

Use of AI within judicial proceedings

Risk- assessment tools : predicting reoffending

Three main fields of applications:

1. Custody

2. Sentencing

3. Execution of a criminal sanction

Predicting probabilities of reoffending by the interested person to support judicial decision - making
Not binding

1. High risk
2. Medium risk
3. Low risk

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How does this work in practice?
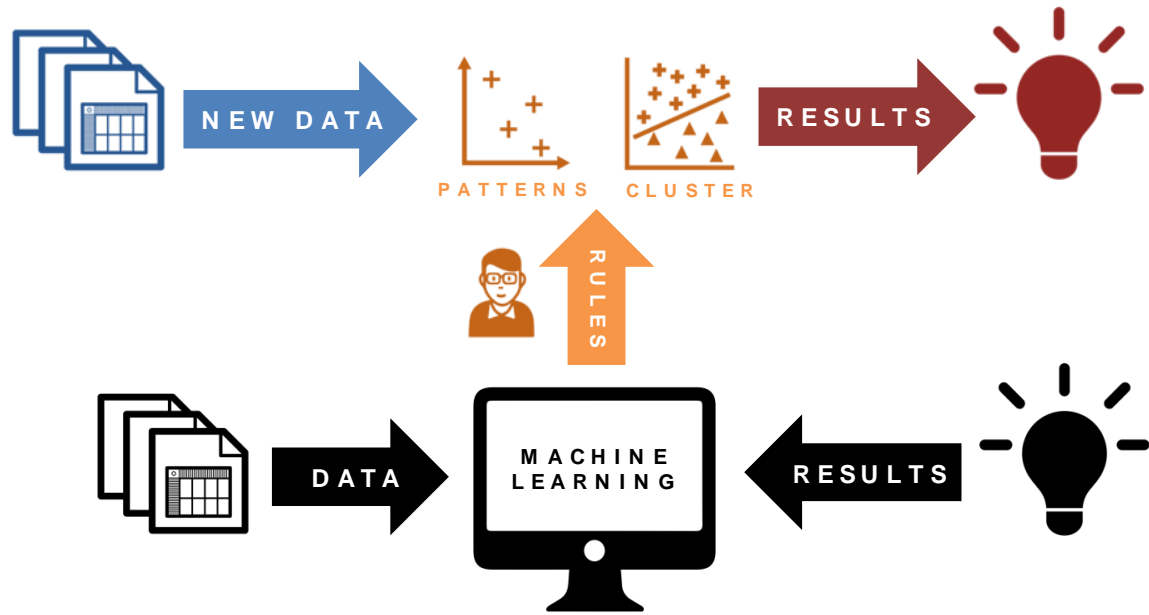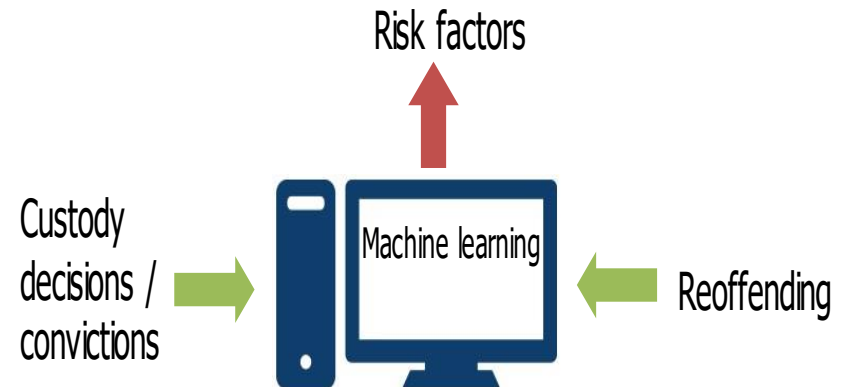
Machine learning principles of functioning

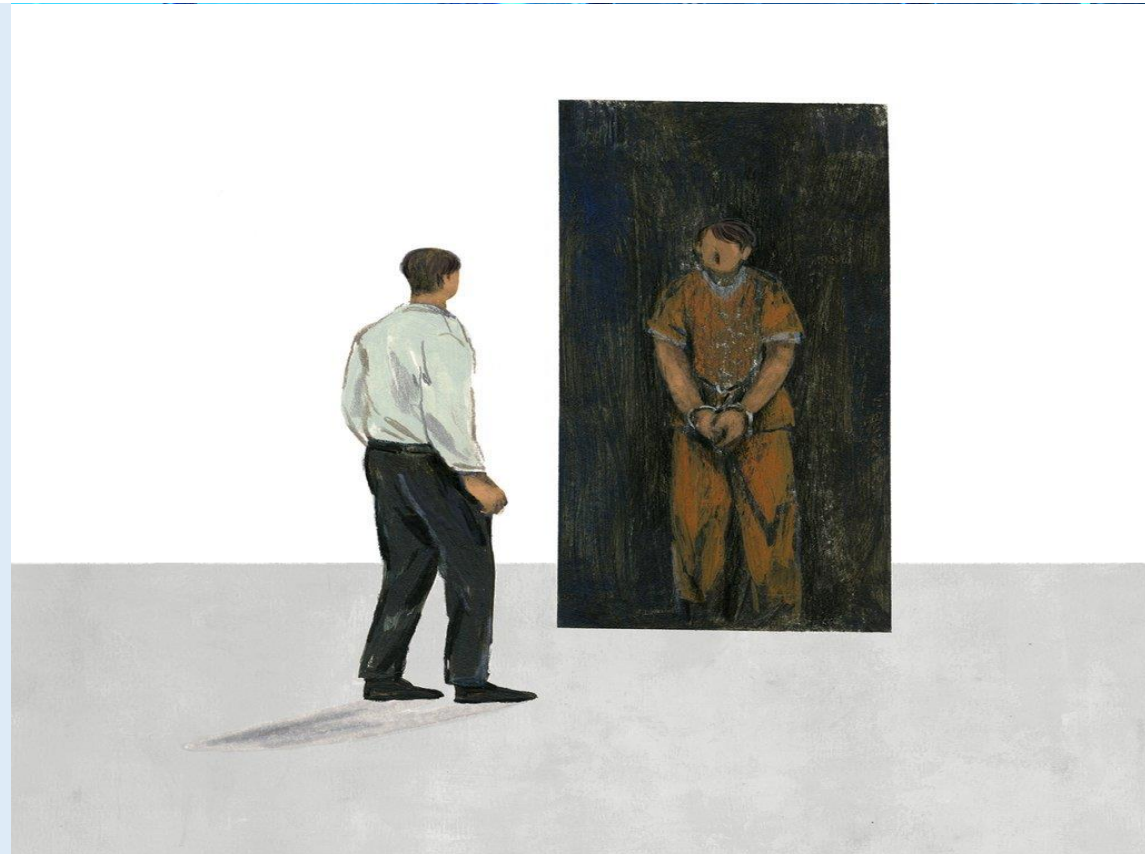Fig.2: Machine learning alone produces models by automatically searching for correlation results.

Risk- assessment tools : predicting reffending

Risk factors

Sexe
Age
Family history
Level of studies
Employment
Income and financial situation
Criminal history
Crime attitude
Residence

Example

COMPASS
137 questions
Extract
of questionnair

Criminal Attitudes

The next statements are about your feelings and beliefs about various things. Again, there are no 'or wrong' answers. Just indicate how much you agree or disagree with each statement.

127. "A hungry person has a right to steal."
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

128. "When people get into trouble with the law it's because they have no chance to get a decent job."
☐ Strongly Disagree ☑ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

129. "When people do minor offenses or use drugs they don't hurt anyone except themselves."
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

130. "If someone insults my friends, family or group they are asking for trouble."
☐ Strongly Disagree ☐ Disagree ☑ Not Sure ☐ Agree ☐ Strongly Agree

131. "When things are stolen from rich people they won't miss the stuff because insurance will cover the loss."
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

132. "I have felt very angry at someone or at something."
☐ Strongly Disagree ☐ Disagree ☐ Not Sure ☑ Agree ☐ Strongly Agree

133. "Some people must be treated roughly or beaten up just to send them a clear message."
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

134. "I won't hesitate to hit or threaten people if they have done something to hurt my friends
☐ Strongly Disagree ☐ Disagree ☑ Not Sure ☐ Agree ☐ Strongly Agree

135. "The law doesn't help average people."
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

136. "Many people get into trouble or use drugs because society has given them no education,
☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

137. "Some people just don't deserve any respect and should be treated like animals."
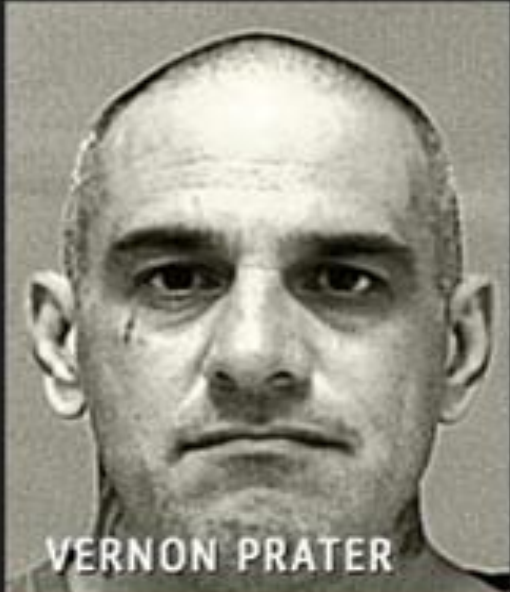☑ Strongly Disagree ☐ Disagree ☐ Not Sure ☐ Agree ☐ Strongly Agree

More matches with recidivists' previously answered questionnaires → Higher probabilities of reoffending

Risk- assessment tools : predicting re-offending
in real life……

Recidivism rate of afroamericans is estimated double than other populations in the two years following criminal conviction

ProPublica, 2016:
Biased data bring biased results

Two Petty Theft Arrests

VERNON PRATER
LOW RISK 3

BRISHA BORDEN
HIGH RISK 8

Borden was rated high risk for future crime after she and a friend took a kid's bike and scooter that were sitting outside. She did not reoffend.

Points of attention: judicial phase

Risk of a resurgence of a determinist doctrine in criminal matters (vs. a social doctrine)

What individualization of sentence?

Risks of discriminations and mistakes

TYPES DE CRIMINELS.

AI: more precise than humans?

HART in the U.K: Durham Police: asssing reoffending (custody)

High predictions rates (88% for individuals considered as high risks) but possible misclassification of false negatives and false positives pointed out

AI: more precise than humans?

Objective: not let false negatives go into society... help avoiding mistakes... BUT:

Out of 888 examples of custody studied, police officers agree with AI predictions on high risks offenders only in 10% of the cases

Points of attention: criminal field

Accountability and responsibility

Transparency of the algorithm and equality of arms in a criminal trial

Which place, which effects of algorithms on judicial decision-making?

Possible positive applications….

Study whether big data can facilitate the collection of objective information on an individual's life path, processed by a professional (judge, probation officer)

Thank you !

Questions / Discussion

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