A Left Realist Critique of the Political Value of Adopting Machine Learning Systems in Criminal Justice

Fabio Massimo Zennaro¹

Department of Informatics University of Oslo

F.M. Zennaro 1 / 16

¹fabiomz@ifi.uio.no

Aim

Fairness of adopted machine learning systems



Fairness of **adopting** machine learning systems

F.M. Zennaro 2 / 16

Aim

Fariness of adopted machine learning systems.

How does my system perform in terms of fairness metrics? What fairness metrics make sense?



Fariness of adopting machine learning systems.

What is the role of a ML system? What is the political value of a ML system?

3 / 16

Terms

What is the political value of a ML system?

ML system

- A supervised system
- modelling a functional relationship between input and output
- by minimizing a given loss function

Political value

- Artifacts (and technology) are not neutral [4, 3]
- Values it expresses (implicit)
- Values it makes easy to express (instrumental)

F.M. Zennaro 4 / 16

Case study

What is the political value of adopting ML system in the context of criminal justice?

Criminal justice

- Parole assessment, risk assessment, recidivism assessment, police deployment, crime prevention...
- Long historical relationship with statistics [1]
- Very relevant in fair ML [5, 2]

F.M. Zennaro 5 / 16

Methodology

How to uncover political values in the adoption of ML systems in criminal justice?

Critical assessment through the lens of Left Realism (LR)

- Criminological theory from 1980s proposed by Lea and Young [4]
- Middle ground between left idealism and law and order (L&O)
- Often define in opposition to L&O

We assess where ML systems lie on the spectrum of concerns between LR and L&O with respect to six issues.

F.M. Zennaro 6 / 16

1. Understanding of Crime

L&O

LR

- Priority in fighting crime
- Reliance on simplified sociological category

- Priority in understanding crime
- Complex explanation of behaviour

- ML focus on correlation and effects
- ML coarse categorical labeling

(Casual ML)

:. ML systems may be used to disregard cause-effects links and entrench oversimplification of criminologial categories

F.M. Zennaro 7 / 16

2. Types of Crime

L&0

IR

- Focus on specific crimes
- Authoritative definition of crime
- Wider view on crimes ("white-collar")
- Awareness of gap between definition and perception

- ML reliance on standardized data
- ML strict labeling

• (Transfer ML)

:. ML systems may reinforce historical data and definition given by labeling

F.M. Zennaro 8 / 16

3. Data interpretation

L&0

IR

- Direct use of statistics
- Statistics for enforcing policies
- Deep analysis of statistics
- Careful use in decision-making

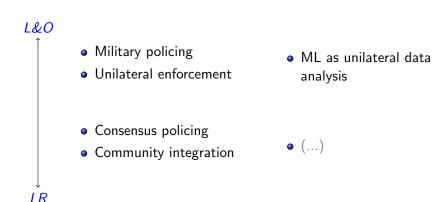
- ML statistical assumption
- ML as a decision-making tool

• (Statistical ML)

:. ML systems may foster an instrumental-legalistic processing of data

F.M. Zennaro 9 / 16

4. Policing



... ML systems may better support military policing approaches

F.M. Zennaro 10 / 16

5. Accountability



:. ML systems may favour opaque policies on the ground of efficiency

F.M. Zennaro 11 / 16

6. Analogy with CCTV

1980s

- Adoption of CCTV
- New technology
- Promise of efficiency
- Idea of data intelligence
- Idea of remote control

2010s

- Adoption of ML systems
- New technology
- Promise of efficiency
- Idea of data intelligence
- Idea of remote control

:. ML systems may promote a "fire-brigade" mentality in law enforcement

F.M. Zennaro 12 / 16

Discussion

Simplified analogical analysis of ML systems:

- ML systems are more than functional models
- Criminal justice theory richer than a simple dichotomy

Yet, ML systems have *implicit political biases* that may be overlooked or exploited

- Danger of *naive adoption* (technological enthusiasm)
- Danger of instrumental adoption (justification of aims through ML means)

F.M. Zennaro 13 / 16

Conclusions

Adopting ML systems is a choice that has a political value.

Development of technology ha made the adoption of technology more political [4].

F.M. Zennaro 14 / 16

Thanks

Thank you for listening!

F.M. Zennaro 15 / 16

References I

- [1] Chelsea Barabas, Karthik Dinakar, Joichi Ito Virza, Jonathan Zittrain, et al. Interventions over predictions: Reframing the ethical debate for actuarial risk assessment. arXiv preprint arXiv:1712.08238, 2017.
- [2] Richard Berk, Hoda Heidari, Shahin Jabbari, Michael Kearns, and Aaron Roth. Fairness in criminal justice risk assessments: the state of the art. arXiv preprint arXiv:1703.09207, 2017.
- [3] Luciano Floridi. Infraethics—on the conditions of possibility of morality. *Philosophy & Technology*, 30(4):391–394, 2017.
- [4] John Lea, Jock Young, et al. What is to be done about law and order? 1984.
- [5] Rashida Richardson, Jason Schultz, and Kate Crawford. Dirty data, bad predictions: How civil rights violations impact police data, predictive policing systems, and justice. *New York University Law Review Online, Forthcoming*, 2019.

F.M. Zennaro 16 / 16