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

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Aim

Fairness of **adopted** *machine learning systems*
How does my system perform in terms of fairness metrics?
What fairness metrics make sense?

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Fairness of **adopting** *machine learning systems*
What is the role of a ML system?
What is the political value of adopting a ML system?

Terms

What is the political value of adopting ML system?

ML system

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

Political value

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

What is the political value of adopting ML systems 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]

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)

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

What are positions of L&O and LR on a set of representative issues?

	Law and Order	Left Realism
1. *Approach to Crime*	Priority on fighting crime	Priority on understanding
	Simplified sociological category	Explanation of behaviour
2. *Types of Crimes*	Focus on specific crimes	Wider view on crimes
	Authoritative definitions	Definition-perception gaps
3. *Interpretation*	Direct use of statistics	Deep analysis of statistics
	Statistics for enforcing policies	Careful use in decision-making
4. *Policing*	Military policing	Consensus policing
	Unilateral enforcement	Community integration
5. *Accountability*	Police efficiency	Democratic overview
	Covertness	Transparency

How do ML systems align with respect to L&O and LR on these issues?

	ML Features	
1. *Approch to Crime*	Focus on correlation Coarse categorical labeling	*Disregard of cause-effects links and entrenchment of oversimplified criminologial categories*
2. *Types of Crimes*	Reliance on available data Strict labeling	*Reinforcement of historical data and definitions*
3. *Interpretation*	Use irrespective of assumptions Direct decision-making tool	*Instrumental-legalistic processing of data*
4. *Policing*	Unilateral data analysis	*Support for military policing*
5. *Accountability*	Poor interpretability Black box	*Support for opaque policies on the ground of efficiency*

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

Discussion and Conclusion

Simplified analogical analysis of ML systems:

- ML systems are more than *functional models* (causal ML, transfer learning, interpretable ML)
- 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)

Thanks

Thank you for listening!

[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.