ML and Econ Reading Group

# "Roles for Computing in Social Change" Abebe, Barocas, Kleinberg, Levy, Raghavan, Robinson, 2020 (ACM)

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Algorithmic system have the potential to:

- 1. Allocate scare resources efficiently
- 2. Exacerbate inequalities/inequities that may already exist.

Can modifications to automated decision making ever address structural inequalities?

 $\rightarrow$  Incrementalists (within contours of the existing) vs. wholesale social and political reform

Granted that computing cannot "solve" all injustices in society, Abebe et al. (2020) offer four roles computing can play to foster social change:

- 1. As a Diagnosis measure the problem
- 2. As a Formalizer to define problems in a precise way
- 3. As a Rebuttal to delimit what's possible with computing
- 4. As a Synecdoche to make salient old issues

## Diagnosis: understand and measure long standing social problems

- Issues w/ bias of search results, gendered translations, gender shades
- Formal definitions of fairness can be considered a diagnostic tool, i.e. a benchmark against which systems can be compared (normative approach)

These are not solutions but rather ways to document practices (and break through the black-box).

Caveats:

- Computing is not the only tool to diagnose: economics/sociology, qualitative work
- Demand effects

Formalizer: computing adds precision to vaguely defined problem

- High stake decisions are often ill defined and leave a lot of space to biases: bail hearing / hiring etc.
- Discrete number of specific rules (how rules are made)
- Identifying biases in the data source (outcomes)

# $\label{eq:Formalization} \mathsf{Formalization} \rightarrow \underbrace{\textit{Transparency}/Accountability}_{\text{The model}} \rightarrow \mathsf{Decision}$

Caveats:

- Technical feasibility can draw attention away from the original issue and towards what's technically feasible
- Inaccurate assumptions

#### Rebuttal: draw limits of technical interventions

- Technical experts showing/debating the limits of computational approaches (e.g. immigration assessments)
- Mathematical rebuttal
- Shows limits of policy frameworks (the law) that don't internalize historical injustices (only look at decision points)
- Computing can rebut long standing beliefs about existing constraints (e.g. narrow conceptualization of a problem)

## Synecdoche: make long-standing problems newly salient

A part that stands in for the larger whole in the discourse

- Many of the issues exist already computing just makes them more salient (e.g. exploitation of workers)
- Using "the shiny new toy" (computing) as a way to shed light on important issues