Auditing Algorithms For Bias and Exploring New Collaborative Data Models for Credit Unions

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toward fairness and algorithmic accountability

need to better understand bias

need to better understand fairness

need to evaluate the burden of proof

need to develop alternative relationships for data and algorithmic processes
OBJECTIVE FACTS  
WHAT CONFIRMS YOUR BELIEFS  
WHAT YOU SEE
Your ZIP Code shouldn’t predict how long you’ll live, but it does.
**BURDENS OF PROOF**

- **Beyond a Reasonable Doubt**
  - Requires elimination of every reasonable doubt.

- **Clear and Convincing Evidence**
  - Firm belief or conviction.

- **Preponderance**
  - More likely than not.

- **Probable Cause**
  - Facts and circumstances lead an ordinary person to believe.

- **Reasonable Suspicion**
  - Specific and articulable facts.

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**Why a pyramid?** As the level of proof required rises, the fewer number of cases meet the level of proof.
And this proves Morgana is a witch does it, Gaius?

A witch!

QUACK! QUACK!

BURN HER!
Machine Bias

There’s software used across the country to predict future criminals. And it’s biased against blacks.

by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica
May 23, 2016
Enforcement/Regulation

• Spotty, lots of entities and approaches, ad hoc
• Privacy
• Discrimination
• Burden of proof always on the one seeking redress not the originator
Mayor de Blasio Announces First-In-Nation Task Force To Examine Automated Decision Systems Used By The City

May 16, 2018

NEW YORK—Today, Mayor de Blasio announced the creation of the Automated Decision Systems Task Force which will explore how New York City uses algorithms. The task force, the first of its kind in the U.S., will work to develop a process for reviewing “automated decision systems,” commonly known as algorithms, through the lens of equity, fairness and accountability.

“As data and technology become more central to the work of city government, the algorithms we use to aid decision making must be aligned with our goals and values,” said Mayor de Blasio. “The establishment of the Automated Decision Systems Task Force is an important first step towards greater transparency and equity in our use of technology.”
HUD: Paired testing and housing discrimination studies

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<tr>
<th></th>
<th>Renting (Compared to Whites)</th>
<th>Buying (Compared to Whites)</th>
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<tbody>
<tr>
<td><strong>Blacks</strong></td>
<td>Told About: 11.4%</td>
<td>SHOWN: 4.2%</td>
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<td>... FEWER UNITS</td>
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<td><strong>Hispanics</strong></td>
<td>Told About: 12.5%</td>
<td>SHOWN: 7.5%</td>
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<tr>
<td><strong>Asians</strong></td>
<td>Told About: 9.8%</td>
<td>SHOWN: 6.6%</td>
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Methods for auditing algorithms

- Code audit
- Normative user audit
- Scraping audit
- Sock puppet audit
- Crowd-sourced or collaborative audit
Code audit
Normative user audit

- Sampling bias

- Self-report bias
Sockpuppet audit
Crowdsourced audit
An “algorithmic observatory”

DIGITAL METHODS FOR INTERNET POLICY AND POLITICS

Projects

The Algorithmic Media Observatory explores the implications of algorithms and other changes in computational culture across a number of fields. At present, the group is investigating:

1. The use of Internet measurement in public policy in Canada
2. This history of artificial intelligence in politics
3. The implications of discoverability for cultural politics and policy
4. The use and abuse of political bots and other kinds of digital campaigning in Canada
5. Emergent methods to detect digital surveillance
Filene thanks its sponsors for their significant contributions to Filene’s Center for Emerging Technology and for helping to make this research possible.

THANK YOU

ACKNOWLEDGEMENTS