University of Pittsburgh

Report of the Pittsburgh Task Force on Public Algorithms

A Snapshot

Algorithms have become a part of our daily lives, even if we are unaware that they're running in the background. They shape internet search results. They guide choices about what to watch or read, what to buy, who to date. They help healthcare providers determine treatments we may need.

Increasingly, local government agencies are also using algorithms to guide decisions and deliver services to the public. For example, some local and regional governments use algorithms to make decisions about bus schedules, timing of stoplights, police patrols, child welfare, bail and sentencing in court systems, and more. And yet, despite their growing prevalence, the public often knows little about government algorithmic systems: their goals, how they work, what data they use, and more.

Government use of algorithms can help solve complex problems and improve delivery of public services, potentially enhancing safety, efficiency, and more. But there is also evidence that some algorithmic systems can lock in and exacerbate bias and harms—especially along racial and gender lines—leading to more inequity and injustice.

To help governments in Allegheny County, Pittsburgh, and beyond develop and manage algorithms that solve problems and avoid harms, the Pittsburgh Task Force on Public Algorithms endeavored to learn from our local governments' experiences with these systems.

We observed a range of approaches with profoundly different commitments to being transparent, engaging the public, and ensuring accountability. Here, as across the country, government agencies have a mixed track record of employing algorithms. Some have used algorithms to improve on prior human-based processes and outcomes and have done so with openness, humility, and community participation. Some have not.

The task force offers concrete recommendations to encourage accountability of the public algorithmic systems in our region. We hope that these recommendations, if implemented, will offer transparency into government algorithmic systems, facilitate public participation in the development of such systems, empower outside scrutiny of agency systems, and create an environment where appropriate systems can responsibly flourish.

There is a tremendous opportunity for the Pittsburgh region to fashion a framework for managing and harnessing public algorithmic systems. Such actions will require investments, ones that the task force believes are worthy of support. If we are successful, municipalities across the country could look to this framework as a model, positioning Pittsburgh as a leader and helping to achieve greater algorithmic justice and accountability balanced with responsible growth.

Task Force Recommendations

Based on research, lessons learned from case studies, and public feedback, the task force outlined recommendations for local and regional governments to manage algorithmic systems and ensure accountable use of algorithmic systems in all agencies. The recommendations are:

- **Encourage meaningful public participation**, commensurate with the risk level of the potential algorithmic system.
- **Involve the public in algorithmic system development plans**, from the earliest stages through any later substantive changes to the system.
- **Utilize external reviews** when the system might be higher risk.
- **Assess whether any planned procurement** might include an algorithmic system.
- **Publish information** about algorithmic systems on a public registry website.
- **Avoid facial-recognition** and related systems.
- **Evaluate effectiveness** of recommendations.

The task force believes that government consideration of any algorithmic system should entail (1) a comparison of that system and its expected benefits to the existing human decision-making process it would supplant or supplement and (2) a weighing of those benefits against expected or potential problems (and mitigations) inherent in the system or its data.

Such balancing of costs and benefits must be done with a full appreciation of all perspectives and include robust public involvement to improve outcomes and to engender trust.

The entirety of the recommendations is included in the task force's full report, along with information about selected public algorithms in the Pittsburgh region.

The report and additional materials can be found at cyber.pitt.edu/algorithms.

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