1st Symposium on Foundations of Responsible Computing

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Edited by

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Preface

With the rise of the consumer internet, algorithmic decision making became personal. Beginning with relatively mundane things like targeted advertising, machine learning was brought to bear to make decisions *about people* (e.g. which ad to show them), and was trained on enormous datasets of personal information that we increasingly generated unknowingly, as part of our every-day "digital exhaust". In the last several years, these technologies have been deployed in increasingly consequential domains. We no longer just use machine learning for targeting ads. We use it to inform criminal sentencing, to set credit limits and approve loans, and to inform hiring and compensation decisions. All of this means that it is increasingly urgent that our automated decision-making upholds social norms like "privacy" and "fairness" that we are accustomed to thinking about colloquially and informally, but are difficult to define precisely enough to encode as constraints on algorithms. It also means that we must grapple with strategic interactions, as changes in our algorithms lead to changes in the behavior of the users whose data the algorithms operate on.

It is exactly because the definitions are so difficult to get right that strong theoretical foundations are badly needed. We need definitions that have meaningful semantics, and we need to understand both the limits of our ability to design algorithms satisfying these definitions, and the tradeoffs involved in doing so. Foundations of Responsible Computing is a venue for developing this theory.

Our first program is a great example of the kind of work we aim to feature. We have 17 accepted papers, 10 of which appear in this proceedings (we allow authors to opt to instead have a one-page abstract appear on the website but not in the proceedings, to facilitate different publication cultures). The program includes formal proposals for how to reason about different kinds of privacy that fall short of differential privacy, but that we much reckon with because of legal or other practical realities. It includes work studying the implications of imposing fairness constraints in the presence of faulty data. It contains work aimed at making strong but to-date impractical fairness constraints more actionable. And it contains papers studying the strategic and game theoretic effects of deployed algorithms. This is all to say, our inaugural conference has much to say about the foundations of computation in the presence of pressing social concerns.

Finally, let me note that our program committee finished their work in the midst of a historic global pandemic, that has and continues to disrupt all of our lives. Despite this, they did a remarkable job. The ongoing pandemic will mean that we cannot meet in person for FORC 2020, but it will not lessen the impact of the work, now to be presented in a remote format.

Aaron Roth
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