

## Minimizing Bias in Computer Systems

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### INTRODUCTION

A few Novembers ago I walked into my familiar voting place -- the run-down social hall of a local church in Berkeley, California. The same old voting booths on tottering legs with scant curtains greeted me. Inside, however, was something new -- a computerized voting card. With a bit of fumbling and careful reading of the directions, I think I figured the thing out. Cast my vote. Participated in the modern democracy. But nationwide, computer punch card tallying systems pose serious problems for fair elections. In particular, under-educated groups are more likely not to understand how the computerized system works and, thus, to invalidate their own votes by either not voting for a position, or by voting for more than one person per position [1]. This example begins to illustrate how the interface design of computerized voting systems can favor some groups over others. More generally, the example speaks to the problem of bias in computing technologies.

In this workshop we are concerned with understanding bias in computer systems and developing methods to help minimize bias through the design process. The workshop builds on the organizers' previous work, presented in Amsterdam at InterCHI 1993 [2, 3], which provides a framework for understanding bias in computer systems. In the workshop, we apply this framework and draw on participants' research and design experiences to (a) identify common biases in computer systems, (b) generate design guidelines for minimizing bias, and (c) gain hands-on experience with minimizing bias in a design.

### WORKSHOP GOALS

- To share with colleagues a framework for understanding bias in computer systems.

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- To provide a forum (opportunity) for colleagues to discuss issues of bias in computer systems that have arisen from their own design experiences.
- To work with colleagues to identify a list of common biases and means to minimize them. For example, interface designs that rely on color to convey information can become biased against people who are colorblind. Such bias against colorblind people can be avoided by encoding the information not only in the hue, but in its intensity, or in some other format unrelated to color.
- To work with colleagues to generate design guidelines to minimize bias. For example, rapid prototyping, formative evaluation, and field testing with a well-conceived population of users can be an effective means to detect unintentional biases in a design early on in the design process.
- To provide colleagues with a "low tech" hands-on experience with minimizing bias in the design of an interface.

### REFERENCES

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