
Position Paper For CHI 2017 Workshop on Values In Computing

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Abstract

This is a position paper for the Values In Computing workshop for CHI '17, reflecting on author's position regarding the importance of values in technological decision-making. It also describes some of the author's interests in and relevant background work.

Author Keywords

Values; Societal Computing; Impacts of Technology; Human factors.

ACM Classification Keywords

H.1.2. User/Machine Systems; H.5.3 Group and Organization Interfaces; I.2.1 Artificial Intelligence Applications and Expert Systems, K.4.0 Computers and Society.

Position Paper

When an environment is relatively stable, individuals can be trained to repeatedly follow a specific, methodical pattern of steps, with little allowance for individual discretion. This is the model that led many people's work during and after the Industrial Revolution, where individuals were often treated as mere cogs in a larger organizational machine.

Though many such jobs still exist today, accelerating technological progress means the world is changing

much more rapidly, and in a changing world, people increasingly often have to face decisions they have not encountered before nor been specifically trained for. This may be truest in the computing and software development fields, where participants tend to automate what they can, specifically so they can focus on the novel and interesting frontiers.

At the same time, it is becoming more common for computing technologies to have impact on what we can and can't do. These technologies now play increasingly active roles in setting people's capabilities and limits in credit, purchasing, pricing, work, physical movement through the world, and even social interactions. Applied in human bodies, roads, skies, battlefields, policy simulations, and other contexts, computers literally make life-or-death decisions every day.

When decisions that increasingly affect peoples' lives are being made increasingly often in novel situations decreasingly covered by rules and specific training, it is values that guide the growing majority of those decisions. This is true especially but not only in technology fields, and it is why the international citizen sector organization Ashoka is now focusing on programs that build up the core skills that people will need to make those values-guided decisions (e.g. empathy), spreading beyond their old model of just identifying and supporting leading social entrepreneurs.

This increased flexibility and increasing percentage of values-based decisions makes life better for some, particularly those who get to make those decisions. Many people value the freedom to make choices and have autonomy [7: 35], which satisfies some elements of Maslow's categorization of human needs and

motivations. It is also worth noting that the incorrect assumption that Maslow's categorization is a strict hierarchy, especially where most others are primarily motivated by the lower levels, can lead to inappropriate balancing of values in making decisions [5: 182–187].

Who else benefits from the values-based decisions we are making increasingly often? Who suffers? What are the full consequences of the changes we are making, and do they make society better? Do we even think about those questions? Too often, the last answer is no.

Often, the decisions about what problems computing technologies are developed to solve, and how, are driven by relatively short-term profit motives and the interests of those with the capital to fund the technological development. This capital-based barrier is falling, and more people are getting into the field.

However, the diversity of who is involved in making technical decisions is still relatively low, and leaves out perspectives that might value certain groups or steps. For example, the team behind HP's rollout of face-tracking software evidently did not place sufficient value on testing the algorithm with dark-skinned faces, leading to an embarrassing viral video showing the technology's success at tracking a white woman but not her black co-worker [1]. A new "AI4ALL" foundation focuses on fixing the lack of diversity in settings where impactful values-based technology judgments are being made, through programs like the Stanford Artificial Intelligence Laboratory's Outreach Summer (SAILORS) program, noting that "AI will change the world" and asking "Who will change AI?" [9].

The author was previously an intern for Ashoka, on a semester leave from graduate studies.

Several years ago, I had the fortune of being able to observe the transformation of social structures in a close-knit community that I was a part of. In this community, the general pace of change was intentionally slow. Many of its methods, tools, and physical facilities (most still in use today) were centuries or millennia old, and things historically did not change very much very quickly. However, in the course of a few years (during which I had a formal technology role), adoption of technologies and access (particularly Internet and communications technologies) moved forward rapidly. This change approached a natural experiment, connecting the technological changes with the changes in community values that seemed to causally result. These observations helped inspire a later model for social structural changes produced by greater access to diverse human capital, presented at the International Symposium on Technology and Society (ISTAS) [11].

The author is a member of IEEE Society on Social Implications of Technology, host of ISTAS.

The author is also a member of the National Coalition for Dialogue & Deliberation (NCDD) and International Association for Public Participation (IAP2).

Deliberation, generally, is a process for weighing value-laden options in advance of making a decision. Deliberative forums [2] are one way of doing that, and allow public engagement and input in a more constructive way than the traditional “town hall” meeting used to solicit public input to decisions that will affect the public. I have been helping facilitate instances of this method for public engagement in Pittsburgh, PA [see 3,6]. Ahead of particular value-laden technology development or regulatory decisions, these methods could be used to ensure consideration of a broader set of human values and perspectives from populations that may be affected by the decision.

Technology-mediated *online* deliberation offers the possibility of scaling up discussions to include a much

larger number of people, collecting input on decisions in and out of technology fields. While new Internet connectivity has changed the way we relate to one another in direct discussions, it has the potential to help us relate to one another on a much larger scale to solve previously intractable issues [see 8,10]. I am passionate about work to help us realize that latter potential.

Design considerations for such systems affect levels and qualities of participation [12], and need to be made in a way that reflects the values of the intended participants (e.g. around level of identification or anonymity, and barriers to participation). Shortly before this workshop, I plan to defend a thesis examining human factors relating to a few elements of design for such systems (e.g. [13,14]), and very shortly after, to graduate from a new PhD program in Societal Computing.

As a field, Societal Computing is still being defined, and explicit consideration of values is clearly a part of it. Engineering Dean Domenico Grasso had this to say years earlier: “We have a responsibility to ensure that holistic approaches are the norm of engineering’s global future... A world in which global engineers design exciting technologies, but [do so] disconnected from the richness of the human condition, society, and the natural environment, is a world in which we are all the poorer” [4]. I look forward to the workshop on Values in Computing to discuss explicit consideration of values in technology decisions, and hope to contribute to the joint publication workshop organizers hope the gathering will produce.

Acknowledgements

Thanks to the many individuals who have been part of communities and conversations shaping the views described herein. Special thanks to program directors Kathleen Carley and Jim Herbsleb and the faculty and students of Carnegie Mellon University's Societal Computing program, for paying explicit attention to these important issues and helping shape a new field. Thanks also to the National Science Foundation for support under grant #1302522. The views expressed herein are the author's and do not necessarily reflect the views of the National Science Foundation or others.

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