Crowd Computing and Human Computation Algorithms

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Abstract
Crowd computing harnesses the power of people out in the web to do tasks that are hard for individual users or computers to do alone. Like cloud computing, crowd computing offers elastic, on-demand human resources that can drive new applications and new ways of thinking about technology. This talk will describe several prototype systems we have built, including:

* Soylent, a Word plugin that crowdsources text editing tasks;
* VizWiz, an app that helps blind people see using a crowd’s eyes;
* Adrenaline, a camera shutter driven by crowd perception;
* Caesar, a system for code reviewing by a crowd of programmers;
* TurKit, a toolkit for prototyping “human computation algorithms” on top of Amazon Mechanical Turk.

Crowd computing raises new challenges at the intersection of systems and HCI, including minimizing latency, improving quality of work, and providing the right incentives to the crowd. The talk will discuss the design space and the techniques we have developed to address these problems. We are now in a position where "Wizard of Oz" is no longer just a prototyping technique -- thanks to crowd computing, Wizard of Oz systems can be useful and deployable.

Biography
Rob Miller is an associate professor of computer science at MIT CSAIL. He earned his PhD from Carnegie Mellon University (2002), and has won an ACM Distinguished Dissertation honorable mention, NSF CAREER award, and six best paper awards at UIST and USENIX. His research interests lie at the intersection of programming and human computer interaction: making programming easier for end-users (web end-user programming), making it more productive for professionals (HCI for software developers), and making humans part of the programming system itself (crowd computing and human computation).

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