

Achieving greater complexity — or “making crowd–work yuge”
Crowdsourcing research has spent the better part of a decade attempting to prove the viability of crowdsourcing in increasingly complex work. Kittur et al. map the discussion toward this goal in their work on crowdsourcing complex work [4]. The broader body of work has varied significantly in type — providing conversational assistants, interpreting medical data, telling coherent and compelling stories [5, 7, 3].

This diverse body of research has involved similar approaches to problems, namely consisting of insights made by the Computer Science community. The crowdwork literature typically identifies target milestones in CS that have presented significant challenges for researchers, leverages some of the approaches and insights that Computer Science researchers have already made (for example, MapReduce in the case of Kittur et al.’s *CrowdForge*), and arranges humans as computational black boxes within those approaches and processes [8, 4, and others].

The research into piecework has identified a number of major constraints that we should expect to find when applying piecework approaches to labor markets. Graves, who describes piecework as “... based on examination of various shop jobs, which included calculation of the standard time and compensation for each task” [2]. Graves later enumerates some of the roles required to facilitate piecework in the early 20th century: “... piecework clerks, inspectors, and “experts”...” [2]. Brown makes a more assertive claim about the factors necessary for piecework to thrive, specifically arguing that “... incentive pay is less likely in jobs with a variety of duties than in jobs with a narrow set of routinized duties” [1]. Graves makes another claim that successful cases of piecework owed themselves in part to the fact that “... only [the largest and most wealthy railroads] had the resources to ... pay the overhead involved in installing work reorganization” [2].

Digital media have expanded the scope of viable piecework by pushing drastically on the limits cited by piecework researchers. The research on piecework tells us that we should expect piecework to thrive in industries where the nature of the work is limited in complexity. Given the flourishing of on–demand labor platforms such as Uber, Amazon Mechanical Turk, and others, we ask ourselves what — if anything — has changed. We argue that the Internet has trivialized the costs and challenges of the earlier limiting factors for two reasons: 1) Technology make it much easier to do complex work aided by computers; and 2) The Internet allows us to leverage the benefits of “economies of scale” at very little cost to the system–designer [6].

[al2: Graves also argues that a significant obstacle to the introduction of piecework in railroad shops was the resistance of workers (the other being the resistance of management (for different and varying reasons)). In the cases of online platforms like AMT and digitally mediated platforms like Uber, where in both cases workers rarely if ever interact face–to–face and opportunities for coordination and collective action are severely limited, we should expect to see the challenges stymieing collective action that we see in Salehi et al. and elsewhere [2, 9].]

Teevan, Liebling, and Lasecki push the boundaries of decomposed work, exploring “selfsourcing”, and further this work with Teevan et al. [10, 11]. While some of this work doesn’t strictly fall under “crowdsourcing”, the [scientific] management of the self as a worker (of sorts) will prove relevant as we trace the literature surrounding piecework.