Social Computing Systems

Walter S. Lasecki

EECS 498, Winter 2016
(http://tiny.cc/socsClass)
Pre-Class Announcements

● **You can now take notes for participation credit!**
  ○ Must be turned in the SAME day as class. In a shared (w/ me) Google Doc.
  ○ You must be okay sharing with the class, though you can keep the doc anonymous (I’ll copy it)
  ○ Everyone using the notes is responsible for helping to find errors. (This **doesn’t** revise grades)
  ○ Hooray for introverts! But I also hope you all keep talking to me…

● Team Assignment B has been graded
  ○ Feedback is in the form of annotated doc in the feedback on the submitted version

● Team Assignment C is posted
  ○ It’s going to be a race to get to the final projects!
  ○ Start on Team Assignment D (feedback) before I post it. The ‘preview’ is enough to go on.

● All grades posted, visible, and any relevant quiz-drops have been applied
[[ Quiz ]]
http://goo.gl/forms/90puCjyJgy
Final Project Updates

● Rough timeline:
  ○ Team Assignment D: Due 3/17 (1 week)
  ○ Team Assignment E: Due 3/24 (1 week)
  ○ < Assignment 2: Due 3/31 (1 week) > [?]
  ○ Final Project Presentations: 4/12 + 4/14 (2 weeks for project + ~1 week for presentation prep)

● Start testing once you have your study designed
  ○ I’ll try to give feedback on assignments as they come in, but email me when you submit(!)
  ○ Build as soon as you know what you need to build and why

● Other concerns?
  ○ There’s no “new” programming techniques in this class.
  ○ (Building a slicker DB access framework doesn’t really help if the group UX is bad.)
Experimental Design Primer

- Qualitative vs. Quantitative
  - Some analysis can turn one into the other
  - E.g., 'behavioral coding' to get quant stats from qualitative content (video)

- Methods
  - Feedback
    - Surveys; in-person interviews (structured/unstructured/semi-structured)
  - Observation
    - Fly-on-the-wall
  - Experiments
    - Controlled experiments; in-the-wild deployments
    - Within-subject design vs. Between-subject design

- Next time: data analysis methods
Experimental Design Resources

Starting point: Bilge Mutlu’s slides - [http://hci.cs.wisc.edu/courses/hci/lectures/fall2011/HCI-Week05-Lecture06.pdf](http://hci.cs.wisc.edu/courses/hci/lectures/fall2011/HCI-Week05-Lecture06.pdf)


You will need to supplement these resources with online guides specific to your proj

Clarification: ‘The Social Computing Circle’

“We talked about this... but not this.”

“... applications and services that facilitate collective action and social interaction online with rich exchange of multimedia information and evolution of aggregate knowledge...” [48]

“... the interplay between persons' social behaviors and their interactions with computing technologies” [15]
[My version of a] Revised Venn Diagram (WRONG)

Note: This is "wrong" because we CAN have non social computing crowdsourcing (e.g., asking the community to help clean up a park). Though, we won't focus on that type in this class.

(a different type of thing, mostly)
Today

- Human computation and crowdsourcing platforms
Choosing a Crowd
Importance of Crowd + Incentive Selection

- Asking a good question to the wrong person isn’t good
  - Medical advice from a gas station attendant
  - Medical advice from a lawyer
  - Programming advice from an M.D.

- Asking the right person with the wrong incentives leads to problems too
  - Classic “paid by the hour” comments
  - Opposite: fixed-pay
  - How do we design incentives?
    - Discussed more next class

- Not all worker-crowds may be incentivized by the same things in all cases
  - True of people in general (they care about different things)
Dimensions of a Crowd

- Reliability
- Expertise
- Availability
- Location
- Motivation
Dimensions of a Crowd

- Reliability
- Expertise
- Availability
- Location
- Motivation

(first Google image search result for 'realm')
Reliability

- How confident are we that the system will always work?

- Answer accuracy
  - Does the task require skill or knowledge?
  - Also depends on expertise

- Commitment
  - Will the crowd always contribute?
  - Will they do the minimum or push for completion / improvement
  - Also depends on motivation
Expertise

- What skills are needed / available?
- Specific knowledge (e.g., botany, ornithology)
- Training in a particular skill (e.g., touch-typing, writing)
- Familiarity with an interface or task (e.g., Photoshop, FoldIt)
- Familiarity with a platform (e.g., MTurk)
Expertise: Platform Considerations

- Visibility of experience / skills
- Evidence for skills
- Other feedback
Availability

- How responsive can we expect the system to be?

- Collective availability
  - Can it be “Always on”?  

- Per-worker time-on-task

- Online times for a specific worker (length of engagement)

- Recruiting and routing latency
  - How fast can a worker get to the task after selection?
Availability: Platform Considerations

- How are tasks posted?
  - What details can be included easily (e.g., about pay rate and incentives)

- Posting latency
  - How long does it take for the task to appear in front of workers?

- Posting / hiring interaction (e.g., API or interview)
  - Depends on platform functionality as well as culture

- How long is a ‘typical’ task?
  - Defined by functionality and culture
Location

- Where are workers recruited and working from?
- In person versus online
  - And if in person, where? If online, what platform / page?
  - Much like any advertising, positioning matters
- Location-based knowledge
  - What do people in a particular place know that others don’t?
  - Relates to expertise
Location: Platform Considerations

- Location of post (e.g., in-person or online; where online?)

- Does post location predict work location?
  - Example: if we post a flier in a campus quad, we’ll probably get students [on campus]

- Does post location predict expertise?
  - Example: Heimerl et al., vending machine — post a question-answering vending machine in a hospital break room to get expert medical opinions (without interviewing or filtering).
Motivation

- Why are workers participating? What incentives are at play?
  - For-pay (large part of system-supporting crowds)
    - Extrinsic benefit
  - Volunteers (want to help others/community)
    - Intrinsic benefit
  - Users (help contribute for the resulting benefit)
    - Often combined benefit
  - Enjoyment (e.g., games with a purpose)
    - Intrinsic benefit

- How visible are rewards?
  - People need to be able to understand what the result of their actions are
  - Otherwise, even the perfect reward scheme won’t have the desired effect
Motivation: Platform Considerations

- Types of payments and feedback
  - Money
  - Points / leader-boards
  - ‘Barn Stars’ (Wikipedia)
  - Result feedback (e.g., “your contributions helped 15 people!”)
  - Notoriety (discrete rewards / ‘winners’)
  - [[ what else? ]]

- Incentive mechanisms supported
  - Not all mechanisms can be implemented on all platforms
  - For example, without bonuses, MTurk could not support time-based incentives
Example Platforms
Amazon Mechanical Turk

Mechanical Turk is a marketplace for work.
We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient.

209,881 HITs available. View them now.

Make Money by working on HITs
HITs - Human Intelligence Tasks - are individual tasks that you work on. Find HITs now.

As a Mechanical Turk Worker you:
- Can work from home
- Choose your own work hours
- Get paid for doing good work

Get Results from Mechanical Turk Workers
Ask workers to complete HITs - Human Intelligence Tasks - and get results using Mechanical Turk. Get Started.

As a Mechanical Turk Requester you:
- Have access to a global, on-demand, 24 x 7 workforce
- Get thousands of HITs completed in minutes
- Pay only when you're satisfied with the results
# Amazon Mechanical Turk

**All HITs**

1-10 of 1633 Results

<table>
<thead>
<tr>
<th>Requester</th>
<th>HIT Expiration Date</th>
<th>Time Allotted</th>
<th>Reward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jon Breig</td>
<td>Sep 16, 2015 (6 days 23 hours)</td>
<td>2 hours</td>
<td>$0.08</td>
</tr>
<tr>
<td>Jon Breig</td>
<td>Sep 16, 2015 (6 days 23 hours)</td>
<td>20 minutes</td>
<td>$0.02</td>
</tr>
<tr>
<td>CopyText Inc.</td>
<td>Sep 16, 2015 (6 days 23 hours)</td>
<td>10 minutes</td>
<td>$0.01</td>
</tr>
<tr>
<td>Jon Breig</td>
<td>Sep 16, 2015 (6 days 23 hours)</td>
<td>2 hours</td>
<td>$0.01</td>
</tr>
<tr>
<td>Consumer &amp; Business Intelligence at Hill Holliday</td>
<td>Sep 16, 2015 (6 days 22 hours)</td>
<td>60 minutes</td>
<td>$0.03</td>
</tr>
<tr>
<td>Haed-a-mole by Gazel</td>
<td>1 min eye tracking game in the web browser! 0909</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Extract purchased items from a shopping receipt (1-2 items)

Hit Reward: $0.01 for first 2 items + Bonus: $0.01 for every 4 items.

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>Qty</th>
<th>Item Description</th>
<th>Price</th>
<th>Per Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Item</td>
<td>1</td>
<td>EXAMPLE DESCRIPTION</td>
<td>26.97</td>
<td>8.99</td>
</tr>
<tr>
<td>2.</td>
<td>Item</td>
<td>1</td>
<td>CLOROX BLEACH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**What is the transaction date & time on the receipt?**

06/24/2015  

**SubTotal:**

**Sales Tax:**

**Total:**

3.92

If total not captured in image, mark receipt above as "Not Readable or Not Receipt"
Crowdflower

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WORKING AT SAMASOURCE
We are a dynamic team passionate about changing the world

OUR TEAM
Over 92% of our incoming workers are unemployed or underemployed. On average, our workers increase previous income by 114% after six months of Samasource employment, and 89% of workers pursue additional means of formal employment and/or education after working for Samasource.

114% INCREASE IN INCOME

Households become more secure

Our workers spend a significant amount of their earnings on things to improve their families’ quality of life including safer housing, healthier food, and education for their children.

- Safer housing: $21→$48
- Healthier food: $20→$40
- Education for children: $14→$24
Where will great work take you?

Find freelancers to tackle any job, any size, any time

How It Works
Upwork (formerly oDesk)

WEB DEVELOPERS

MOBILE DEVELOPERS

DESIGNERS & CREATIVES

WRITERS

VIRTUAL ASSISTANTS

CUSTOMER SERVICE AGENTS

SEO SPECIALISTS
EMAIL AUTOMATORS
MARKETING EXPERTS

and more...

ACCOUNTANTS & CONSULTANTS

See All Categories
Upwork: Hiring

sam steele
Windows Automation Consultant - PowerShell, SCCM
Warilla, Australia
1:46am local time - 14 hrs ahead
Microsoft SCCM, Windows PowerShell, VBScript, Operating Systems Development, VMware Administration

Overview

12 years Windows administration with strong skills in:
* SOE design (XP and Windows 7)
* Scripting - vbscript and powershell
* SCCM 2007 and SCCM 2012
* Altiris Deployment Server and Notification
* Software packaging - MSI (using install shield) and AppV
* SCOM 2012
* Orchestrator 2012
* SQL administration and basic SQL query skills
* Vsphere 4 and 5

In the last 2 years, I have been responsible for implementing SCCM in a large enterprise environment covering multiple sites. This role also include the SOE design for Windows 7 and software packaging.

I have excellent automation skills using vbscript, powershell, powercli and SQL.
Upwork: Hiring

Work History and Feedback

Jan 2013 - Present
Windows 2012 System Engineer unattended set-up
Job in progress

Mar 2014 - Jun 2014
LDAP/User monitoring
★★★★★ 5.00

Sam was a great resource who finished the work on time, within budget, and more features than originally requested.

Tests

<table>
<thead>
<tr>
<th>Name</th>
<th>Score (out of 5)</th>
<th>Time to Complete</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Server 2008 Test</td>
<td>4.00 Top 10%</td>
<td>40 mins</td>
<td>Details</td>
</tr>
</tbody>
</table>
Games Example: FoldIt
This Class (recap)

- Human computation and crowdsourcing platforms
  - Using groups of people in computational processes
  - Often used for “AI-hard” problems and other tasks we can’t automate

- Opportunities and connections
  - Flexible, equitable, always-available work for many skill sets
  - Smart systems that solve hard problems today, not 100 years from now
  - Fields: CS, management science, social science, …
Next Class

- Lecture Topic:
  - Quality control and workflows in crowdsourcing (+ data analysis)

- Readings (for this week):
  - The Demographics of Mechanical Turk by P. Ipeirotis (also posted on the website)

- Assignments:
  - Team Assignment C — DUE Thursday, 3/17, 11:59pm

(Here it is, your moment of Zen)