CS 5306
INFO 5306: Crowdsourcing and Human Computation

Lecture 5
9/5/17
Haym Hirsh
Upcoming

• Thursday, Sep 7, 4:15 (after class)
  Henry Kautz, Mining Social Media to Improve Public Health
  (extra credit)

• Tuesday, Sep 12 (in class)
  Serge Belongie

• Tuesday, Sep 12 (evening, details TBA)
  Team forming event

• Thursday, Sep 28, 4:15 (after class)
  Michael Bernstein
  (extra credit)
Cornell Tech/Law Colloquium
Tuesdays 7:30pm Gates G01
infosci.cornell.edu/techlaw-colloquium

- September 5 – Arvind Narayanan (Princeton CS) – “Uncovering Commercial Surveillance on the Web”
- September 12 – Elizabeth Joh (UC Davis Law) – “The Undue Influence of Surveillance Technology Companies on Policing”
- September 26 – Jennifer Doleac (UVA Public Policy/Economics) – "The Deterrent Effects of DNA Databases: Evidence from the US and Denmark"
- October 3 – Solon Barocas (Cornell IS) – “Regulating Inscrutable Systems”
- October 24 – James Grimmelmann (Cornell Law) – “The Structure and Interpretation of Legal Programs”
- October 31 – Fred Schneider (Cornell CS) – “A Doctrine of Public Cybersecurity”
- November 7 – Ifeoma Ajunwa (Cornell IRL) – “Hiring by Algorithm”
- November 14 – Deirdre Mulligan (UC Berkeley IS/Law), "Procurement as Policymaking: Policing Administration in an Era of Intelligent Systems"
- November 28 – Mark Latonero (USC Data & Society Research Institute/Communication) – “Technological Interventions in the Refugee/Migration Crisis”
"Financial incentives and the performance of crowds“, Winter Mason and Duncan J. Watts, In *Proceedings of the 2009 Human Computation Workshop*
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In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967-978), 2014
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“As a result, large crowd employers (such as CrowdFlower or MobileWorks) have begun to build up and train their own trusted workforces of crowd workers”
In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967-978), 2014

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MobileWorks?
In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing* (pp. 967-978), 2014


• Hill, C.A. Affiliation motivation: People who need people... but in different ways. Journal of personality and social psychology 52, 5 (1987), 1008.


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• H-S1: A social strategy will improve workers’ engagement.
• H-S2: A social strategy will improve the quality of crowd work.
• H-L1: A learning strategy in the form of providing feedback will improve the quality of crowd work.
• H-L2: A learning strategy will not improve workers’ engagement.
• H-F1: The financial strategy will improve workers’ engagement.
• H-F2: The financial strategy will improve the quality of crowd work.
In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967- 978), 2014

“We averaged these assessments using the geometric mean to normalize differences among the variance in the judgments”
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Geometric mean?
In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967-978), 2014

“We averaged these assessments using the geometric mean to normalize differences among the variance in the judgments”

Geometric mean?

\[
\left( \frac{\sum^n_{i=1} \ln(a_i)}{n} \right)^\frac{1}{\ln(e)}
\]
"Financial incentives and the performance of crowds“, Winter Mason and Duncan J. Watts, In *Proceedings of the 2009 Human Computation Workshop*

- To control the quality of the rating, verification questions were embedded in the task: two questions were about the content of the original text and the raters were also asked to provide feedback for the summaries.
In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967-978), 2014

- Experiment details:
  - Education level, native English speaker, etc.: Self reported
  - Two judges
  - Quality = geometric mean of accuracy, conciseness and coverage
  - Engagement = return rate
  - Experiment 1: No hypotheses explicitly tested
  - “Due to the large number of summaries, only a sample of summaries (50 summaries) were selected and rated by two judges. The inter-rater agreement score on the overall quality was good (ICC=.81). One judge rated the remainder of summaries.”
  - “Two judges rated the summaries on 7-point Likert scales of coverage, accuracy and conciseness.” / “Each summary was rated by three workers on its accuracy, conciseness and coverage on 7-point scales.”

In Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing (pp. 967-978), 2014

• Social:
  • “found powerful positive effects on workers’ engagement across tasks”
  • “Regarding the social strategy’s effect on quality, it had a positive effect when there was only an imaginary team and self-disclosure of workers’ information, and the effect disappeared when real interaction between workers was provided.”

• Learning
  • “A learning strategy was shown to be most effective in improving quality.”

• Combined
  • “However, when we tried to combine strategies, we found that the effects were not additive on either engagement or task quality. Indeed, some combinations, especially the learning and financial combinations even undercut the positive effect from the single strategy. Except for the negative interaction between the financial and learning strategy, we are not aware of theories to explain such complex interaction among the other strategies.”
Next Time
