Extra Credit Opportunities

• 10/26/17 4:15pm, Gates G01, Tapan Parikh, Cornell Tech
  “Representation Technologies”
  • Avaaj Otalo: a phone-based voice message board allowing small farmers in rural India to ask, answer and browse agricultural questions and answers
  • Local Ground: a data collection, mapping and information visualization tool that helps youth develop data skills by making connections between different representations of empirical phenomena

• 11/16/17 4:15pm, Gates G01, James Grimmelmann, Cornell Law

• 12/1/17 12:15pm, Gates G01, Sudeep Bhatia, Penn Psychology
Other Upcoming Talks of Interest

• 10/31/17 7:00pm, Gates G01, Fred Schneider (Cornell CS)  
  “A Doctrine of Public Cybersecurity”
• 11/02/17 4:15pm, Gates G01, Henrik Christensen (UCSD CS)  
  “Opportunities and Challenges in Robotics”
• 11/07/17 7:00pm, Myron Taylor Hall 184, Ifeoma Ajunwa (Cornell ILR)  
  “Hiring by Algorithm”
• 11/29/17 4:00pm, Gates G01, Juan Gilbert (UF CS)  
  “Broadening Participation in Computing: Breaking Down Barriers and Increasing Access”
Messenger Lectures by Scott Aaronson, UT Austin CS

• 11/27/17 4:00pm, Schwartz Auditorium, Rockefeller Hall
  “Complexity-Theoretic Foundations of Quantum Supremacy Experiments”

• 11/28/17 7:30pm, Schwartz Auditorium, Rockefeller Hall
  “Quantum Computing and the Limits of the Efficiently Computable”

• 11/30/17 4:15pm, Gates G01
  “New Results on Learning and Reconstruction of Quantum States”

• Diversity:
  😊 “as diversity increases in the crowd, the aggregated crowd performance gets closer to the mean. For example, in a problem solving task, diversity ensures that the average crowd performance can at least achieve the group mean. In collective estimation tasks, diversity cancels out errors in individual estimates, making the aggregated result closer to the real value
  😊 “the marginal return of one category (one specific type of expertise) decreases as the category gets larger”
  😊 “Simple aggregation may work well only when social interaction is completely absent in the collaboration process.”
  😊 “diversity in interactive groups can sometimes result in detrimental group dynamics, such as high cost of communication and increased conflicts”
  😊 “Differences in readily detectable attributes (such as race, ethnicity, language, gender, and age) are more likely to negatively influence group identification, psychological safety, and group satisfaction, particularly in the early formation stages of working teams”

• Diversity:
  • Much of this doesn’t apply
    • Crowd size much bigger
    • Interaction modality is very different (asynchronous online)
      • Demographic differences have less effect
  • Focus on:
    • Contribution diversity
    • Experience diversity
    • Aligns with Wikipedia editing task characteristics:
      • Editing tasks are separable
      • Contributions are “synergistic” rather than “additive”

Figure 1. Theoretical Model

- Contribution diversity: the coefficient of variation of the number of edits each editor contributed to a Wikipedia article

![Diagram of theoretical model](image)

- Contribution diversity: the coefficient of variation of the number of edits each editor contributed to a Wikipedia article
- Experience diversity: the coefficient of variation of editors’ total edits

![Theoretical Model](image)

- Contribution diversity: the coefficient of variation of the number of edits each editor contributed to a Wikipedia article
- Experience diversity: the coefficient of variation of editors’ total edits
- Task conflict: # reverts
- Task communication: talk page volume

Figure 1. Theoretical Model

H1: Contribution diversity is positively related to crowd performance.

H2: Experience diversity is negatively related to crowd performance.

H1: Contribution diversity is positively related to crowd performance.

H3: Contribution diversity is negatively related to task conflict within a crowd.

H7: Task conflict is negatively related to crowd performance.

Figure 1. Theoretical Model

H1: Contribution diversity is positively related to crowd performance.

H3: Contribution diversity is negatively related to task conflict within a crowd.

H7: Task conflict is negatively related to crowd performance.

H9: Task communication is positively related to crowd performance.

H8: Task conflict is positively related to task communication within a crowd.

H1: Contribution diversity is positively related to crowd performance.

H4: Contribution diversity is positively related to task communication within a crowd.

H9: Task communication is positively related to crowd performance.

Figure 1. Theoretical Model

H2: Experience diversity is negatively related to crowd performance.

H5: Experience diversity is positively related to task conflict within a crowd.

H6: Experience diversity is positively related to task communication within a crowd.

Figure 1. Theoretical Model

- Complete edit history for 5,899 articles
  - History, Sociology, Geography, Culture, Technology, Mathematics, Science, Philosophy, and Religion
- 142,908 unique editors
  - Complete editing history for all editors
  - Average 4.16 articles

![Figure 1. Theoretical Model](image)

Performance?

Figure 1. Theoretical Model

Performance?

- Performance = article quality using Wikipedia’s article assessment project

**Performance?**

- Performance = article quality using Wikipedia’s article assessment project

![Figure 1. Theoretical Model](image-url)

**Performance?**

- Performance = article quality using Wikipedia’s article assessment project
  - 5: Featured Article
  - 4: Good Article, A-quality
  - 3: B-quality
  - 2: C-quality
  - 1: Start-quality

- Control variables:
  - Article Size: Total number of editors who contributed
  - Article Age
  - Average experience: average number of edits contributed by an article’s editors

![Figure 1. Theoretical Model](image_url)

![Diagram of theoretical model with correlations and hypotheses](image1.png)

**Figure 1. Theoretical Model**

![Diagram of model results with p-values](image2.png)

**Figure 2. Model results. ***p < 0.001, **p < 0.01, *p < 0.1**

Lesson: Pay attention to task conflict and communication

Figure 1. Theoretical Model