# The 4th Human Computation Workshop (HCOMP 2012)



**Opening (8:55 - 9:00)**

**Invited Talk: Jeff Bigham (9:00 - 9:40)**
"Crowd Agents: Interactive Crowd-Powered Systems in the Real World"

*Abstract:*
In this talk, I'll discuss several interactive crowd-powered systems that help people address real-world problems. For instance, VizWiz sends questions blind people have about their visual environment to the crowd, Legion allows outsourcing of desktop tasks to the crowd, and Scribe allows the crowd to caption audio in real-time. The thousands of people have engaged with these systems, providing an interesting look at how end users want to interact with crowd work.
Collectively, these systems illustrate a new approach to human computation in which the dynamic crowd is provided the computational support needed to act as a single, high-quality agent. The classic advantage of the crowd has been its wisdom, but our systems are beginning to show how crowd agents can surpass even expert individuals on motor and cognitive performance tasks.

*Bio:*
Jeffrey P. Bigham is an Assistant Professor in the Department of Computer Science at the University of Rochester where he heads the ROC HCI Group. His work is at the intersection of human-computer interaction, human computation, and artificial intelligence, with a focus on developing innovative technology that serves people with disabilities in their everyday lives. Jeffrey received his B.S.E degree in Computer Science fromPrinceton University in 2003. He received his M.Sc. degree in 2005 and his Ph.D. in 2009, both in Computer Science and Engineering from the University of Washington working with Richard E. Ladner. For his innovative research, Dr. Bigham has won a number of awards, including the Microsoft Imagine Cup Accessible Technology Award, the Andrew W. Mellon Foundation Award for Technology Collaboration, the MIT Technology Review Top 35 Innovators Under 35 Award, and Best Paper Awards at UIST, WSDM, and ASSETS. In 2012, he received the National Science Foundation CAREER Award.

**Session 1: Games (9:40 - 10:20)**

9:40 - 10:00 Systematic Analysis of Output Agreement Games: Effects of Gaming Environment, Social Interaction, and Feedback
*Shih-Wen Huang, UIUC*
*Wai-Tat Fu, University of Illinois at Urbana-Champaign*

10:00 - 10:20 Doodling: A Gaming Paradigm for Generating Language Data
*A Kumaran, Microsoft Research India*
*Sujay Jauhar, University of Wolverhampton*
*Sumit Basu, Microsoft Research*

**1st Coffee Break / Poster Session (10:20 - 11:00)**

CAPTCHAs with a Purpose
*Suhas Aggarwal, IIT Guwahati*

Crowd-Sourcing Design: Sketch Minimization using Crowds for Feedback
*David Engel, MIT*
*Verena Kottler, Max Planck Institute for Developmental Biology*
*Christoph Malisi, Max Planck Institute for Developmental Biology*
*Marc Röttig, University of Tuebingen Center for Bioinformatics*
*Eva Willing, Max Planck Institute for Plant~Breeding Research*
*Sebastian Schultheiss, Max Planck Institute*

To Crowdsource or Not to Crowdsource?
*Gireeja Ranade, UC Berkeley*
*Lav R. Varshney, IBM Thomas J. Watson Research Center*

Learning from Crowds and Experts
*Hiroshi Kajino, The University of Tokyo*
*Yuta Tsuboi, IBM Research - Tokyo*
*Issei Sato, The University of Tokyo*
*Hisashi Kashima, The University of Tokyo*

Squaring and Scripting the ESP Game
*François Bry, Ludwig-Maximilian University*
*Christoph Wieser, Ludwig-Maximilian University of Munich*

Automatically providing action plans helps people complete tasks
*Nicolas Kokkalis, Stanford*
*Scott Klemmer, Stanford*
*Thomas Koehn, Stanford*

The Role of Super Agents in Mobile Crowdsourcing
*Mohamed Musthag, Univ. of Massachusetts, Amhers*
*Deepak Ganesan, University of Massachusetts*

Detecting Deceptive Opinion Spam using Human Computation
*Christopher Harris, The University of Iowa*

Improving Quality of Crowdsourced Labels via Probabilistic Matrix Factorization
*Hyun Joon Jung, University of Texas at Austin*
*Matthew Lease, University of Texas at Austin*

Towards Social Norm Design for Crowdsourcing Markets
*Chien-Ju Ho, UCLA*
*Yu Zhang, UCLA*
*Jennifer Wortman Vaughan, UCLA*
*Mihaela van der Schaar, UCLA*

**Session 2: Machine Learning (11:00 - 11:40)**

11:00 - 11:20 Crowdclustering with Sparse Pairwise Labels: A Matrix Completion Approach
*Jinfeng Yi, Michigan State University*
*Rong Jin, Michigan State University*
*Anil Jain, Michigan State University*
*Shaili Jain, Yale University*

11:20 - 11:40 Crowdsourcing Control: Moving Beyond Multiple Choice
*Christopher Lin, University of Washington*
*Mausam, University of Washington*
*Daniel Weld, University of Washington*

**Session 3: Platforms (11:40 - 12:20)**

11:40 - 12:00 TurkServer: Enabling Synchronous and Longitudinal Online Experiments
*Andrew Mao, Harvard University*
*Yiling Chen, Harvard University*
*Krzysztof Gajos, Harvard University*
*David Parkes, Harvard University*
*Ariel Procaccia, Carnegie Mellon University*

*Haoqi Zhang, Harvard University*

12:00 - 12:20 MobileWorks: A Non-Marketplace Architecture for Accurate Human Computation
*Anand Kulkarni*, MobileWorks / UC Berkeley*
*Philipp Gutheim, MobileWorks, UC Berkeley*
*Prayag Narula, MobileWorks, UC Berkeley*
*David Rolnitzky, MobileWorks*
*Tapan Parikh, University of California, Berkeley*
*Bjoern Hartmann, University of California, Berkeley*

**Lunch (12:20 - 1:40)**

**Invited Talk: Adam Kalai (1:40 - 2:20)**
"Programming by Example Revisted"

*Abstract:* An old dream is to program computers through examples rather than by writing code. One particularly common domain is text-processing: automating tasks such as extracting author names from a bibliography, removing duplicate entries in a log file. As in many human computation problems, a key aspect of the problem is breaking a task into small steps, each of which is easy to understand. Over the years, several systems have been built with this aim, yet none have been widely adopted. We discuss why this is the case, surveying the earlier systems, and describe what a handful of researchers are doing to address the problem. Joint work with: Sumit Gulwani, Butler Lampson, Aditya Menon, Rob Miller, Omer Tamuz, Shubham Tulsiani, and Kuat Yessenov

*Bio:* Adam Tauman Kalai received his BA (1996) from Harvard, and MA (1998) and PhD (2001) under the supervision of Avrim Blum from CMU. After an NSF postdoctoral fellowship at M.I.T. with Santosh Vempala, he served as an assistant professor at the Toyota Technological institute at Chicago and then at Georgia Tech. He is now a Senior Researcher at Microsoft Research New England. His honors include an NSF CAREER award, and an Alfred P. Sloan fellowship. His research focuses on computational learning theory, human computation, and algorithms.

**Session 4: Applications (2:20 - 3:40)**

2:20 - 2:40 Crowdsourcing Annotations for Visual Object Detection
*Hao Su, Stanford University*
*Jia Deng, Stanford University*
*Fei-Fei Li, Stanford University*

2:40 - 3:00 Part Annotations via Pairwise Correspondence
*Subhransu Maji, TTIC*
*Greg Shakhnarovich, TTIC*

3:00 - 3:20 Contextual Commonsense Knowledge Acquisition from Social Content by Crowdsourcing Explanations
*Yen-Ling Kuo, National Taiwan University*
*Jane Yung-jen Hsu, National Taiwan University*
*Fuming Shih,MIT*

3:20 - 3:40 Hallucination: a mixed-initiative approach for efficient document reconstruction
*Haoqi Zhang, Harvard University*
*John Lai, Harvard University*
*Moritz Baecher, Harvard University*

**2nd Coffee Break / Poster Session (3:40 - 4:20)**

Social Choice for Human Computation
*Andrew Mao, Harvard University*
*Ariel Procaccia, Carnegie Mellon University*
*Yiling Chen, Harvard University*

Predicting Crowd-based Translation Quality with Language-independent Feature Vectors
*Markus Krause, University of Bremen*
*Jan Smeddinck, University of Bremen*
*Niklas Kilian,*
*Nina Runge, Uni Bremen*

Machine-learning for Spammer Detection in Crowd-sourcing
*Harry Halpin, MIT*
*Roi Blanco , Yahoo! Research*

Crowdsourcing: Dynamically Switching between Synergistic Workflows
*Christopher Lin, University of Washington*
*Mausam, University of Washington*
*Daniel Weld, University of Washington*

Learning Sociocultural Knowledge via Crowdsourced Examples
*Mark Riedl, Georgia Institute of Technolog*
*Boyang Li, Georgia Institute of Technology*
*Stephen Lee-Urban, Georgia Institute of Technology*
*Darren Appling, Georgia Institute of Technology*

Playful Surveys: Easing Challenges of Human Subject Research with Online Crowds
*Markus Krause, University of Bremen*
*Jan Smeddinck, University of Bremen*
*Aneta Takhtamysheva, University of Bremen*
*Velislav Markov, University of Bremen*
*Nina Runge, Uni Bremen*

Personalized Online Education—A Crowdsourcing Challenge
*Daniel Weld, University of Washington*
*Eric Horvitz, Microsoft Research*
*Raphael Hoffmann, University of Washington*
*Eytan Adar, University of Michigan*
*Lydia Chilton, Unviersity of Washington*
*Mitchell Koch, Unviersity of Washington*
*Christopher Lin, University of Washington*
*Mausam, University of Washington*

Using the Crowd to Do Natural Language Programming
*Mehdi Manshadi, University of Rochester*
*Carolyn Keenan, University of Rochester*
*James Allen, University of Rochester*

Diamonds From the Rough: Improving Drawing, Painting, and Singing via Crowdsourcing
*Yotam Gingold, Rutgers / Columbia*
*Etienne Vouga, Columbia University*
*Eitan Grinspun, Columbia University*
*Haym Hirsh, Rutgers University*

Collecting Representative Pictures for Words: A Human Computation Approach based on Draw Something Game
*Jun Wang, Syracuse University*
*Bei Yu, Syracuse University*

**Business Meeting: 1st AAAI Human Computation Conference 2013 (4:20 - 5:20)**
*led by Eric Horvtiz*

**Closing (5:20-5:30)**

**Workshop Dinner (6:30 - 9:00)**