

GARY HSIEH

Human-Computer Interaction Institute
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RESEARCH INTEREST

I am broadly interested in Human-Computer Interaction (HCI), Computer-Mediated Communication and Behavioral Economics. Specifically, my interest are on studying, designing and developing technologies that leverage economic and social incentives to enable people to communicate and interact in ways that are efficient and socially optimal.

I have primarily worked on understanding how to apply **financial mechanisms** to support the allocation of **human attention** for **interpersonal information exchange**. I have conducted laboratory experiments to study the feasibility of using economic markets to improve communication efficiency and I used my findings to build real-time market-enabled question and answer services. I also study how financial rewards effect social relationships on **social question and answer** sites. Recently, I have started to build tools for running user studies on Mechanical Turk. I also started to design and evaluate technology that encourages philanthropic actions and contributions to public goods (**prosocial computing**).

Keywords: Human-computer interaction, incentive mechanisms, human attention management, behavioral economics, question and answer, prosocial computing, crowdsourcing marketplace, peripheral displays

EDUCATION

Ph.D. Candidate in Human-Computer Interaction, Aug 2004 – May 2010 (expected)
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

Dissertation: **Applying Market Mechanisms for Interpersonal Information Exchange**
Advisors: Scott Hudson (HCII) & Robert Kraut (HCII)
Committee: Roberto Weber (Social & Decision Sciences) & Laura Dabbish (Heinz College of Public Policy)

Bachelor of Science, Electrical Engineering and Computer Science, May 2003
University of California, Berkeley, CA
Minor: Business Administrations

PUBLICATIONS

REFEREED PAPERS

Hsieh, G., Counts, S. (2009)
mimir: A Market-Based Real-Time Question and Answer Service. CHI'09: *ACM Conference on Human Factors in Computing Systems*. Boston, MA. pp.769-778. [Acceptance Rate: 24%]

- Hsieh, G.**, Kraut, R., Hudson, S.E., Weber, R. (2008)
Can Markets Help?: Applying Market Mechanisms to Improve Synchronous Communication. CSCW'08: *ACM Conference on Computer Supported Cooperative Work*. San Diego, CA. pp. 535-544. [Acceptance Rate: 23%]
- Hsieh, G.**, Li, I., Dey, A., Forlizzi, J., Hudson, S.E. (2008)
Using Visualization to Increase Compliance in Experience Sampling. UBICOMP'08: *International Conference on Ubiquitous Computing*. Seoul, South Korea. pp. 164-167. [Acceptance rate: 19%]
- Hsieh, G.**, Hudson, S.E., Kraut, R., Lai, J. (2008)
Using Tags to Assist Near-Synchronous Communication. CHI'08: *ACM Conference on Human Factors in Computing Systems*. Florence, Italy. pp. 223-226. [Acceptance Rate: 18%]
- Hsieh, G.**, Tang, K.P., Low, W.Y., Hong, J.I. (2007)
Field Deployment of IMBuddy: A Study of Privacy Control and Feedback Mechanism for Contextual IM. UBICOMP'07: *International Conference on Ubiquitous Computing*. Innsbruck, Austria. pp. 91-108. [Acceptance rate: 14%]
- Dabbish, L., **Hsieh, G.**, Kraut, R., Hudson, S.E. (2007)
Prioritization in Computer-Mediated Communication: Influences of Urgency, Notification, and Identity. AOM'07: *Academy of Management Best Paper Proceedings*.
- Cornwell J., Fette I., **Hsieh G.**, Prabaker M., Rao J., Tang K., Vaniea K., Bauer L., Cranor L., Hong J., McLaren B., Reiter M., Sadeh N. (2007)
User-Controllable Security and Privacy For Pervasive Computing. HotMobile'07: *IEEE Workshop on Mobile Computing Systems and Applications*. Tucson, AZ. pp. 14-19.
- Hsieh, G.**, Wood, K., Sellen, A. (2006)
Peripheral Display of Digital Handwritten Notes. CHI'06: *ACM Conference on Human Factors in Computing Systems*. Montreal, Canada. pp. 285-288. [Acceptance rate: 23%]
- Churchill, E., Nelson, L., **Hsieh, G.** (2005)
Café Life in the Digital Age: Augmenting Information Flow in a café-work-entertainment Space. CHI'05: *ACM Conference on Human Factors in Computing Systems. Extended Abstracts*. Montreal, Canada. pp.123-128.
- Keyani, P., **Hsieh, G.**, Mutlu, B., Easterday, M., Forlizzi, J. (2005)
DanceAlong: Supporting Positive Social Exchange and Exercise for the Elderly Through Dance. CHI'05: *ACM Conference on Human Factors in Computing Systems*. Portland, OR. pp. 1541-1544. [Acceptance rate: 25%]
- Mankoff, J., Dey, A.K., **Hsieh, G.**, Kientz, J., Ames, M., Lederer, S. (2003)
Heuristic evaluation of ambient displays. CHI'03: *ACM Conference on Human Factors in Computing Systems*. Ft. Lauderdale, FL. pp.169-176. [Acceptance rate: 16%]
- Mankoff, J., **Hsieh, G.**, Hung, H.C., Lee S., Nitao, E. (2002)
Using Low-Cost Sensing to Support Nutritional Awareness. UBICOMP'02: *International Conference on Ubiquitous Computing*. Göteborg, Sweden. pp. 371-378.

BOOK CHAPTER

Matthews, T., **Hsieh, G.**, Mankoff, J. (2009)
Evaluating Peripheral Displays. *Awareness Systems: Advances in Theory, Methodology and Design*. Markopoulos, Panos; De Ruyter, Boris; Mackay, Wendy (Eds.). pp. 447-472.

DOCTORAL CONSORTIUM

Hsieh, G. (2008)
Using Market Mechanisms to Improve Real-Time Information Exchange. CSCW 2008: ACM conference on Computer Supported Cooperative Work

TECHNICAL REPORT

Hsieh, G., Mankoff, J. (2003)
A Comparison of Two Peripheral Displays for Monitoring Email: Measuring Usability, Awareness, and Distraction. EECS Department, University of California, Berkeley, Technical Report No. CSD-03-1286.

GRANTS & AWARDS

Microsoft Research Fellowship Finalist, 2008

Yahoo! Research Key Technical Challenges Grant, 2007. \$5,000

Travel Grants for Research Presentations:

Research Institute for the Science of Socio-Technical Systems, 2009

IBM Research HCI Symposium, 2008

CSCW Doctoral Consortium, 2008

Yahoo! Research Key Technical Challenges Conference, 2007

PATENT

Meyers, B., **Hsieh, G.**, Wood, K.
Selection and Display of User-Created Documents. Pending.

INVITED TALKS

IBM Research HCI Symposium, Dec 2008

Using Market Mechanisms to Improve Real-Time Information Exchange

DUB Meeting, University of Washington, Aug 2008

Applying Market Mechanisms to Improve Communication Efficiency

PROFESIONAL EXPERIENCES

Carnegie Mellon University, Pittsburgh, PA, Fall 2004 – present

Graduate Student Researcher

Advisors: Scott Hudson & Robert Kraut

Conducted empirical studies to understanding the effects of using market mechanism for information exchange. Developing technologies to facilitate communication initialization.

Microsoft Research, Redmond, WA, Summer 2008

Research Intern

Mentor: Scott Counts

Designed and implemented a real-time information exchange service called mimir. Conducted an experimental study to understand the effects of using markets to improve information exchange. Analyzed Live QnA usage data.

IBM Research, Hawthorne, NY, Summer 2007

Research Intern

Mentor: Jennifer Lai

Explore the use of message tagging to facilitate near-synchronous communication in IM. Provides an initial design and proof-point for designers planning to incorporate similar concepts into IM communication.

Microsoft Research, Cambridge, United Kingdom, Summer 2005

Research Intern

Mentor: Ken Wood

Designed and implemented a peripheral display supporting tablet pc note takers. Conducted a short-term usage study to understand the different types of benefits from using the display.

Fuji Xerox Palo Alto Laboratory, Palo Alto, CA, Nov 2003 – Mar 2004

Consultant

Manager: Elizabeth Churchill

Analyzed the demographics and behaviors of Canvas Gallery customers. Designed and deployed survey to understand the needs of the customers. Identified potential applications for the eyeCanvas Display.

UC Berkeley and Intel Berkeley, Berkeley, CA, May 2002 – Nov 2003

Research Assistant

Advisors: Jennifer Mankoff & Anind Dey

Adapted heuristic evaluation for ambient displays (aesthetic/non-disruptive peripheral displays). Designed and evaluated two peripheral displays supporting email awareness. Conducted lab and field studies measuring the intricacies between awareness and distraction.

UC Berkeley, Berkeley, CA, May 2002 – Nov 2003

Research Assistant

Advisor: Jennifer Mankoff

Investigated advertisements to see how persuasion is done from a marketing standpoint. Designed and implemented a GUI for shopping list recommendations. Examined different ways to present personal nutrition information.

Embark / The Princeton Review, San Francisco, CA, May 2002 – Nov 2003

Web Development Intern

Evaluated data downloads using Microsoft Access and other download tools; Implemented web interfaces for various universities' undergraduate and graduate applications using HomeSite and other software.

The Clorox Co., Pleasanton, CA, Aug 1998 – May 1999

Research Intern

Conducted various studies to analyze the cost-benefit of the amount of brightener used in Clorox Bleach. Helped reduce the cost of manufacturing Clorox Bleach.

TEACHING
EXPERIENCES

Teaching Assistant, HCI Methods, Fall 2008

Carnegie Mellon University, Pittsburgh, PA

Lectured on Model Human Processor. Assisted with the making and the grading of homework assignments and tests. Advised students on their assignments in office hours.

Teaching Assistant, Programming Usable Interfaces, Spring 2007

Carnegie Mellon University, Pittsburgh, PA

Lectured on how to program in Visual Basic.net. Led a class discussion on well/poorly designed interfaces. Assisted with the grading of homework assignments. Advised students on their assignments in office hours.

Teaching Assistant, User Interface Design, Prototyping and Evaluation, Fall 2002

UC Berkeley, Berkeley, CA

Lectured on the usage of heuristic evaluation in current research. Assisted with the grading of the homework and the semester long project. Advised students on their projects in office hours. Acted as the webmaster for the course website.

ADVISING

Archana Sankaranarayanan, Fall 2009

Supervised Archana on understanding the workers' motivation behind giving low-quality responses on Mechanical Turk. Also supervised Archana on building tools to identify low quality surveys and questionnaires entries.

Linghui Han, Summer 2009

Supervised Linghui on designing and implementing intervention techniques to improve the quality of remote user-studies through Mechanical Turk.

Wai Yong Low (now at Sun Microsystems), Fall 2006 – Spring 2007

Co-supervised Wai Yong on building control and feedback mechanisms for contextual information sharing over instant messengers.

ACADEMIC SERVICES

COMMITTEE

Student Volunteer Co-Chair, CSCW 2010

Program Committee Member, ISR GSRs 2007

REVIEWER

ACM CSCW Conference, CSCW 2008 – present

ACM CHI Conference, CHI 2007 – present

ACM UIST Conference, UIST 2006 – UIST 2008

VOLUNTEER

FIRST LEGO Robotics Tournament (Research Judge, grades 6-8), 2006 - present
International UBICOMP Conference, UBICOMP 2003
ACM CHI Conference, CHI 2003

MEMBER

ACM SIGCHI

SELECTED PRESS
COVERAGE

Hemp, Paul. Death by Information Overload. **Harvard Business Review**. Sept 2009
Jackson, Maggie. May We Have Your Attention Please? **Business Week**. June 2008

REFERENCES

Scott E. Hudson, Professor
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Laura A. Dabbish, Assistant Professor

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