

Justin D. Weisz, Ph.D.

Research Staff Member & Senior Manager, IBM Research

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RESEARCH INTERESTS

My research focuses on designing, building, and evaluating technological solutions that support communication and collaboration in work and non-work situations. My work at IBM has focused on building and studying mobile and wearable solutions across industries including Healthcare, Agriculture, and Field Service. I have developed novel techniques for human-drone interaction, frameworks for rapid enterprise mobile application development, psycholinguistic and personality analytics, and big data visualizations. My work contributes broadly to human-computer interaction and is generally grounded in theories from social psychology and behavioral science.

EDUCATION

Carnegie Mellon University, Pittsburgh, PA

Ph.D. in Computer Science, Computer Science Department 2009

Committee: Sara Kiesler (co-chair), Hui Zhang (co-chair), Luis von Ahn (CMU), Wendy Kellogg (IBM)

Dissertation: *Collaborative Online Video Watching*

M.S. in Computer Science, Computer Science Department 2007

B.S. in Computer Science, School of Computer Science 2003

Graduated with University and SCS College Honors

Senior Honors Thesis: *Detecting Cheaters in a Distributed Multiplayer Game*

PROFESSIONAL EXPERIENCE

IBM T.J. Watson Research, Yorktown Heights, NY **2010 - present**

Research Staff Member & Senior Manager, Mobile Solutions and Infrastructure 2015 - present

Leading team of researchers, designers, and software engineers to produce novel mobile and wearable solutions in industries including healthcare and agriculture. Designing mobile apps to elicit behavioral change in health. Developing novel human-drone interaction techniques in agriculture. Creating systems for managing mobile data in mid-tier architectures.

Research Staff Member & Manager, Mobile Solutions and Infrastructure 2013 - 2015

Research Staff Member 2010 - 2013

Selected research projects at IBM:

- *Zion*. Elicit health behavioral change via B.J. Fogg's Tiny Habits model.
- *BlueHealth*. Enabling Hospital at Home use case via mobile apps, wearable devices, and real-time analytics.
- *Drone Farming*. Mobile apps to aid farmers in requesting drone data and interaction techniques for drone operators to fulfill drone requests. In press: <http://www.ibm.com/blogs/think/2015/10/09/1644/>
- *Augmented Infrastructure & Engaging Infrastructure*. Mobile and wearable solutions for field workers, including smart glasses remote collaboration tool, wearable armband for monitoring worker health & safety, and composition-based programming model and middleware for extending systems of record (e.g. IBM Maximo) with new social and collaborative features.
- *Integrator*. Middleware for migrating system of record data into the cloud for access by mobile apps.
- *Expediting Expertise (EE)*. Content-based expertise building and assessment tool. Designed, implemented, and evaluated novel interactive visualizations for expertise building. Evaluated within a large enterprise (100s of users) and found that the tool helped people discover novel content, build expertise, and locate experts.

- *Anomaly Detection at Multiple Scales (ADAMS)*. Algorithms for emotion detection in text based on psycholinguistic analysis. Evaluated on large corpus (~1M) of corporate emails, achieved top-N precision of ~50%.

IBM T.J. Watson Research, Hawthorne, NY

Summers 2004 & 2005

Summer Intern, Enhanced Web Experience Group (2004) and Social Computing Group (2005)

- Used qualitative and quantitative methods to study use of IBM Community Tools (ICT), a system for broadcasting instant messages to large groups of users.
- Designed and implemented a graph-based visualization for navigating the space of available groups and exploring relationships between groups based on message similarity.

Carnegie Mellon University, Pittsburgh, PA

2003 – 2009

Graduate Research Assistant

- Studied the experience of chatting while watching online videos in laboratory and field settings. Found that chatting while watching videos is an enjoyable activity for both groups of friends and groups of strangers, despite it being distracting (CHI '07). Also found that audio chat was no more distracting than text chat and was preferred to text chat when used (uxTV '08).
- Created the Social Video application on Facebook as a platform for research in online video systems. Implementation built with PHP, MySQL, Flex, JavaScript, and the Facebook and YouTube APIs. Research studies indicated a strong preference for watching with friends and the use of time between videos to chat without being distracted.
- Member of the End System Multicast group. Designed applications for viewing and broadcasting video using peer-to-peer technology. Broadcasted numerous live events on ESM including RoboCup 2005, John Kerry's Campaign Rally (2004) and INFOCOM 2005.
- Member of the CommunityLab group. Participated in activities focused on mining social science literature for theories that can be used to improve participation in online communities.

PUBLICATIONS

Refereed Conference Papers

Lai, J., Lu, J., Pan, S., Soroker, D., Topkara, M., **Weisz, J.**, Boston, J., and Crawford, J. (2014). Expediting expertise: supporting informal social learning in the enterprise. In Proceedings of IUI 2014. ACM, New York, NY, 133-142.

24% acceptance rate

Weisz, J. D. and Kiesler, S. (2008). How text and audio chat change the online video experience. In Proceedings of uxTV'08. ACM, New York, NY, 9-18.

Weisz, J. D., Kiesler, S., Zhang, H., Ren, Y., Kraut, R. E., and Konstan, J. A. (2007). Watching together: integrating text chat with video. In Proceedings of SIGCHI 2007. ACM, New York, NY, 877-886.

25% acceptance rate

Weisz, J. D., Erickson, T., and Kellogg, W. A. (2006). Synchronous broadcast messaging: the use of ICT. In Proceedings of SIGCHI 2006. ACM, New York, NY, 1293-1302.

23% acceptance rate, nominated for best paper award

Refereed Workshop Papers & Extended Abstracts

Ashoori, M., Bellamy, R. K. E., and **Weisz, J. D.** Creating the Mood: Design for a Cognitive Meeting Room. In Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '15). ACM, New York, NY, USA, 2001-2006.

25% acceptance rate

Topkara, M., **Weisz, J. D.**, Pan, S., Lu, J., and Lai, J. (2014). Dare to compare: motivating expertise building in the enterprise through intelligent user modeling interfaces. In 3rd Workshop on Data-driven User Behavioral Modeling and Mining from Social Media (CIKM DUBMOD 2014).

Book Chapters

Weisz, J. D. (2009). Online video as a social activity. In P. Cesar, D. Geerts, and K. Chorianopoulos (Eds.), *Social Interactive Television: Immersive Shared Experiences and Perspectives*. Hershey, PA: IGI Global.

Publicly Disclosed Patents

System support for evaluation consistency

Soroker, D. and Weisz, J. D. US Patent Application 14/035,405.

Capture and display of historical run-time execution traces in a code editor

Malkin, P. K., Martino, J. A., Pickover, C. A., Soroker, D., and Weisz, J. D. US Patent Application 13/837,430.

Enhanced time-management and recommendation system

Malkin, P. K., Martino, J. A., Pickover, C. A., and Weisz, J. D. US Patent Application 13/837,871.

User interface with recipient status notification

Malkin, P. K., Martino, J. A., Pickover, C. A., and Weisz, J. D. US Patent Application 13/748,896.

Real-time microfinance

Cole, A. G., McFaddin, H. S., Narayanaswami, C., and Weisz, J. D. US Patent Application 13/289,516.

System and method for targeted message delivery and subscription

Bellamy, R. K., Malkin, P. K., Richards, J. T., and Weisz, J. D., and Wolf, T. L. US Patent Application US 12/131,415.

PROFESSIONAL SERVICE

Reviewer

CHI: ACM Conference on Human Factors in Computing	since 2006
CSCW: Computer Supported Cooperative Work	since 2006
UBICOMP: ACM Pervasive and Ubiquitous Computing	2014
IUI: Intelligent User Interfaces	2014
MM: ACM Multimedia	2011
PerCom: IEEE Pervasive Computing and Communications	2010
TOCHI: Transactions on Computer Human Interaction	2009
HICSS: Hawaii International Conference on System Sciences	2008

Board Member

Alumni Advisory Board, School of Computer Science, Carnegie Mellon University since 2011

Internal IBM

Chair, Human-Computer Interaction Professional Interest Community 2013 - present
Responsible for maintaining a strong HCI community within IBM and promoting HCI research externally via conference sponsorships, hosting external speakers, and recruiting talented students.