

# Dakuo Wang

## Curriculum Vitae

MIT-IBM Watson AI Research Lab  
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## RESEARCH INTERESTS

Human-computer interaction, computer-supported cooperative work, human-AI collaboration, information visualization.

## EDUCATION

<b>Ph.D.</b> , Information and Computer Science, University of California Irvine, CA Dissertation: <i>Exploring and Supporting Today's Collaborative Writing</i> Committee: Judith S. Olson (Chair), Gary M. Olson, Daniel Russell (Google)	2016
<b>Master of Science</b> , Information and Computer Science, University of California Irvine, CA	2016
<b>Master of Science</b> , Electrical and Computer Engineering, University of California Irvine, CA	2012
<b>Diplôme d'Ingénieur</b> , Système Informatique, Ecole Centrale d'Electronique, Paris, FRANCE	2010
<b>Bachelor of Science</b> , Computer Science, Beijing University of Technology, Beijing, CHINA	2009

## PROFESSIONAL EXPERIENCE

<b>IBM Research AI &amp; MIT-IBM Watson AI Lab</b> , Cambridge, MA, Research Staff Member	2018 — Now
<b>IBM T.J. Watson Research</b> , Yorktown Heights, NY, Research Staff Member	2016 — 2018
<b>IBM China Research Lab</b> , Beijing, CHINA, Research Intern	Summer 2013
<b>University of California Irvine</b> , CA, Research Assistant	2012 — 2016
<b>France Telecom</b> , Paris, FRANCE, System Engineer	2010 — 2011

## PUBLICATIONS

### Journal Publications

- [J2] Olson, J. S., **Wang, D.**, Zhang, J., & Olson, G. M. (2017). How People Write Together Now: Beginning the Investigation with Advanced Undergraduates in a Project Course. *ACM Trans. on Computer-Human Interaction*. 24, 1.
- [J1] **Wang, D.** and Mark, G. (2015). Internet Censorship in China: Examining User Awareness and Attitudes. *ACM Trans. on Computer-Human Interaction*. 22, 6, Article 31 (November 2015), 22pages. DOI=<http://dx.doi.org/10.1145/2818997>

### Conference Publications (Peer Reviewed)

- [C19] Dozaral, J., Weisz, J., **Wang, D.**, Dass, G., Yao, B., Zhao, C., Muller, M., Ju, L., Su, H. (2020) Exploring Information Needs for Establishing Trust in Automated Data Science Systems. *In press IUI 2020*.
- [C18] Karl, D., Weisz, J., Oduor, E., Muller, M., Andres, J., Gray, A., **Wang, D.** (2020) Opening the Blackbox of Automated Artificial Intelligence with Conditional Parallel Coordinates. *In press IUI 2020*.
- [C17] Floyd, F. and others. (2020) Next Steps for Human-Computer Integration: Challenges and Opportunities. *in press CHI 2020*.
- [C16] Zhang, A., Muller, M., **Wang, D.** (2020) Exploring Collaborative Practices and Tools of Data Science Teams. *in press CSCW 2020*.
- [C15] Liu, S., Ram, P., Vijaykeerthy, D., Bouneffouf, D., Bramble, G., Samulowitz, H., **Wang, D.**, Conn, A., Gray, A. (2020) An ADMM Based Framework for AutoML Pipeline Configuration. *in press AAAI 2020*.
- [C14] Mao, Y., **Wang, D.** et al. (2019). To Ask The Right Question Or To Find The Right Answer From Data? Collaborations Between Data Scientists and Bio-Medical Scientists in Data-Centric Open Science Projects. *GROUP 2020*.
- [C13] Tan, M., **Wang, D.**, Gao, Y., Wang, H., Potdar, S., Guo, X., Chang, Shi., Yu, M. (2019) Context-Aware Conversation Thread Detection in Multi-Party Chat. *EMNLP 2019*.
- [C12] Tan, M., Yu, Y., Wang, H., **Wang, D.**, Potdar, S., Chang, Shi., Yu, M. (2019) Out-of-Domain Detection for Low-Resource Text Classification Tasks. *EMNLP 2019*.
- [C11] Tian, F., Fan, X., Fan, J., Zhu, Y., Gao, J., **Wang, D.**, Wang, H. (2019). What Can Gestures Tell?: Detecting Motor Impairment in Early Parkinson's from Common Touch Gestural Interactions. *CHI 2019*.
- [C10] **Wang, D.** et al. (2019). Human-AI Collaboration in Data Science: Exploring Data Scientists' Perceptions of Automated AI. *CSCW 2019*.
- [C9] Wang, H., Tan, M., Yu, M., Chang, S., **Wang, D.**, Xu, K., Guo, X. and Potdar, S. (2019). Extracting Multiple-Relations in One-Pass with Pre-Trained Transformers. *ACL 2019*.
- [C8] Muller, M., Lange, I., **Wang, D.**, Piorkowski, D., Tsay, J., Liao, QV., Dugan, C. (2019). How Data Science Workers Work with Data: Discovery, Capture, Curation, Design, Creation. *CHI 2019*.
- [C7] Shamekhi, A., Liao, QV., **Wang, D.**, Bellamy, RKE., Erickson, T. (2018). Face Value? Exploring the Effects of Embodiment for a Group Facilitation Agent. *CHI 2018*.
- [C6] Liao, QV., Hussain, M., Chandar, P., Davis, M., Crasso, M., **Wang, D.**, Muller, M., Geyer, W. (2018). All Work and no Play? Conversations with a Question-and-Answer Chatbot in the Wild. *CHI 2018*.
- [C5] **Wang, D.**, Tan, H., & Lu, T. (2018). Why Users Do Not Want to Write Together When They Are Writing Together: Users' Rationales for Today's Collaborative Writing Practices. *CSCW 2018*.  
**Best Paper Honorable Mention.**
- [C4] Hou Y., & **Wang, D.** (2018). Hacking with NPOs: Collaborative Analytics and Broker Roles in Civic Data Hackathons. *CSCW 2018*.  
**Best Paper Award.**

- [C3] Yim, S., **Wang, D.**, Olson, J. S., Vu, V., & Warschauer, M. (2017). Synchronous Writing in the Classroom: Undergraduates' Collaborative Practices and their Impact on Text Quality, Quantity, and Style. *CSCW 2017*.
- [C2] **Wang, D.**, Hou, Y., Luo, L., & Pan, Y. (2016). Answerer Engagement in an Enterprise Social Question & Answering System. *iConference 2016 Proceedings*.
- [C1] **Wang, D.**, Olson, J. S., Zhang, J., Nguyen, T., & Olson, G. M. (2015). DocuViz: Visualizing Collaborative Writing. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM, New York, NY, USA, 1865-1874.

## Workshops

- [W7] Fan, X., Yao, J., Tu, H., & **Wang, D.** (2020). ChineseCHI 2020 Workshop at CHI. In CHI 2020. ACM.
- [W6] Jacques, R., Følstad, A., Gerber, E., Grudin, J., Luger, E., Monroy-Hernández, A., & **Wang, D.** (2019). Conversational Agents: Acting on the Wave of Research and Development. In CHI 2019. ACM.
- [W5] Tian, F., Ren, X., Fan, X., Li, W., Mi, H., Lu, T., ... & **Wang, D.** (2019). HCI in China: Research Agenda, Education Curriculum, Industry Partnership, and Communities Building. In CHI 2019. ACM.
- [W4] **Wang, D.** (2019). Human AI Collaboration in Workplace, Data Science, and Healthcare. Human Computer Interaction Consortium (HCIC), Pajaro Dunes, CA.
- [W3] **Wang, D.** (2018). Human-AI Collaboration. Dagstuhl Seminar (17392). Dagstuhl, Germany.
- [W2] **Wang, D.** (2016). Exploring and Supporting Today's Collaborative Writing. Human Computer Interaction Consortium (HCIC), Pajaro Dunes, CA.
- [W1] **Wang, D.** (2016). Understanding and Supporting Collaborative Writing on Google Docs. AAAI Spring Symposium on "Intelligent systems for supporting distributed human teamwork", Stanford, CA.

## Papers in Submission

- [U6] Zhang, Z., et al. Implications of AI Transparency on Human's Trust of Decision-Making AI in Healthcare.
- [U5] **Wang, D.**, et al. Organizational Distance Also Matters: Examining the Impacts of Temporal, Geographical, Role, Organizational Distances on Team Performance In The Workplace.
- [U4] **Wang, D.**, et al. Though AI Outperforms Humans in Building AI, Human-AI Collaboration Is the Future of Data Science.
- [U3] **Wang, D.**, et al. Human-AI Collaboration in Healthcare: Exploring How Doctors Collaborate with AI in Clinical Decision Making in Rural China.
- [U2] Fan, X. et al. Human-AI Interaction in the Wild: A Case Study of How People Use a Health Chatbot.
- [U1] Wang, L., et al. Human-AI Collaboration in Online Health Community: Conversational Agents as Emotional Supporter in a Pregnant Women Online Community.

## PATENTS

### Filed Patents

- [P14] Theodoros Salonidis, John Dillon Eversman, **Dakuo Wang**, Alex Swain, GREGORY BRAMBLE, Lin Ju, NICHOLAS MAZZITELLI, Voranouth Supadulya. AUTOMATED ARTIFICIAL INTELLIGENCE RADIAL VISUALIZATION. IBM. Filed 2019. 16/557760.
- [P13] Chuang Gan, Ming Tan, Yang Zhang, **Dakuo Wang**. A NEW FRAMEWORK FOR FEW-SHOT TEMPORAL ACTION LOCALIZATION. IBM. Filed 2019. 16/661501.
- [P12] **Dakuo Wang**, Ming Tan, Chuang Gan, Haoyu Wang. Summarization of Group Chat Threads. IBM. Filed 2019. 16/595550.

- [P11] Ming TAN, Haoyu Wang, **Dakuo Wang**, Chuang Gan. DETERMINATION OF CONVERSATION THREADS IN A MESSAGE CHANNEL BASED ON CONVERSATIONAL FLOW AND SEMANTIC SIMILARITY OF MESSAGES. IBM. Filed 2019. 16/551321.
- [P10] Haoyu Wang, Ming TAN, **Dakuo Wang**, Chuang Gan, Saloni Potdar. Light-weight Chatbot Intent Classification Distribution Calibration. IBM. Filed 2019. 16/543117.
- [P9] **Dakuo Wang**, Ming TAN, Chuang Gan, Haoyu Wang, Mo Yu. A system and a method to enable natural language interaction with automated machine learning (AutoAI or AutoML) systems. IBM. Filed 2019. 16/551021.
- [P8] Yang Zhang, Chuang Gan, Sijia Liu, **Dakuo Wang**. Synchronized Sound Generation from Videos. IBM. Filed 2019. 16/526990.
- [P7] **Dakuo Wang**, Ming Tan, Mo Yu, Haoyu Wang, Yupeng Gao, Chuang Gan. CONTEXT-AWARE CONVERSATION THREAD DETECTION FOR COMMUNICATION SESSIONS. IBM. Filed 2019. 16/597937.
- [P6] Ming TAN, **Dakuo Wang**, Mo Yu, Haoyu Wang, Yang Yu, Shiyu Chang, Saloni Potdar. Out-of-Domain Detection for Low-Resource Text Classification. IBM. Filed 2019. 16/530457.
- [P5] Ming TAN, **Dakuo Wang**, Mo Yu, Chuang Gan, HAOYU WANG, Shiyu Chang. FACILITATING DETECTION OF CONVERSATION THREADS IN A MESSAGING CHANNEL. IBM. Filed 2019. 16/404156.
- [P4] **Dakuo Wang**, Chuang Gan, Michael Muller, ZIJUN WANG, Daniel M. Gruen. CALCULATING ONLINE SOCIAL NETWORK DISTANCE BETWEEN ENTITIES OF AN ORGANIZATION. IBM. Filed 2019. 16/374398.
- [P3] Chuang Gan, **Dakuo Wang**, Sijia Liu, Yang Zhang. Relation Attention Module for Temporal Action Localization. IBM. Filed 2019.
- [P2] Chuang Gan, Yang Zhang, Sijia Liu, **Dakuo Wang**. ITERATIVE APPROACH FOR WEAKLY-SUPERVISED ACTION LOCALIZATION. IBM. Filed 2019. 16/292847.
- [P1] Sijia Liu, Quanfu Fan, Chuang Gan, **Dakuo Wang**. Quantifying Vulnerabilities of Deep Learning Computing Systems to Adversarial Perturbations. IBM. Filed 2019. 16/296897.

## GRANTS & HONORS

ACM Distinguished Speaker	2019 — Now
Human-in-the-loop Automated Machine Learning, MIT-IBM AI Lab (\$150,000)	2019
ACM Conference on Human Factors in Computing Systems (CHI), Early Career Consortium	2017
ACM Conference on Human Factors in Computing Systems (CHI), Doctoral Consortium	2016
ACM Conference on Computer-Supported Cooperative Work (CSCW), Doctoral Consortium	2016
iConference, Doctoral Consortium	2016
Center for Organizational Research Grant (\$1,000)	2014 — 2015
1 <sup>st</sup> Place at Google Web Hackathon @ UCI	March 2015

## TEACHING & INVITED TALKS

<b>Human-AI Collaboration</b>	November 2019
Invited Talk at ACM SIGCHI China Chapter 15th Anniversary Symposium at Chinese Academy of Science, China.	
<b>Human-AI Collaboration</b>	October 2019
Guest Lecture at Peking University, China. Host: Prof. Baoquan Chen.	

<b>Introduction to HCI and CSCW.</b> CSCW Summer School at Fudan University, China.	Summer 2019
<b>Human-AI Collaboration as a New Paradigm of Human Computer Interaction.</b> Guest Lecture at Chinese Academy of Science, China. Host: Prof. Xiangmin Fan.	December 2018
<b>Human-AI Collaboration as a New Paradigm of Human Computer Interaction.</b> Feature talk at 14th ChineseCSCW in Guilin, China.	Summer 2018
<b>Today's and Future's Computer-Supported Cooperative Work</b> Guest Lecture at College of Computer Science, Fudan University, China. Host: Prof. Tun Lu.	September 2017
<b>INF 133: Projects in Human Computer Interaction</b> Teaching Assistant for Alfred Kobsa. Received 8.11/9.0 overall rating from student survey.	Spring 2014
<b>ICS 11: Internet Public Policy</b> Teaching Assistant for Geoffrey Bowker. Received 8.10/9.0 overall rating from student survey.	Winter 2014
<b>INF 131: User Interaction Software Design</b> Teaching Assistant for Donald Patterson.	Fall 2013
<b>Introduction to Human Computer Interaction and Computer-Supported Cooperative Work</b> Guest Lecture at College of Computer Science, Beijing University of Technology. Host: Hongyu Gao.	Summer 2013
<b>Introduction to Human Computer Interaction and Computer-Supported Cooperative Work</b> Guest Lecture at the School of Economic and Management, Beijing University of Posts and Telecommunications. Host: Lianju Ning.	Summer 2013
<b>ECE 10: Computer Methods in Electrical Computer Engineering</b> Teaching Assistant for Phillip Sheu.	Fall 2011

## MENTORING EXPERIENCE

### List of Student Mentees

Yifan Gao (M.S.) Stony Brook U.	2019
Liuping Wang (Ph.D.) Chinese Academy of Science.	2019
Shuai Ma (M.S.) Chinese Academy of Science.	2019
Haokuan Hou (B.S.) MIT.	2018
Yaoli Mao (Ph.D.) Columbia University.	2017
Ameneh Shamekhi, (Ph.D.) Northeastern University.	2016
Zichao Yuan, (B.S.) UC Irvine.	2016
Kenny Khoa Pham, (B.S.) UC Irvine.	2015
Trung Nguyen, (B.S.) UC Irvine.	2014
James Vinh, (B.S.) UC Irvine.	2014

## SERVICE

### Steering Committee

ACM SIGCHI China Chapter Vice-President	2019 -- 2022
International Chinese Association of CHI (ICACHI) Steering Committee	2018 -- 2020
CCF Technical Committee of HCI	2018 -- Now
CCF Technical Committee of Cooperative Computing	2018 -- Now

### **Conference Organizing Committee**

ACM CSCW 2021 Conference Co-Chair in Demo	2021
ECSCW 2020 Conference Co-Chair in Sponsorship	2020
ACM GROUP 2020 Conference Co-Chair in Workshop	2020
ACM CHI 2019 Conference Co-Chair in Social Media	2019

### **Conference Service**

Program Committee (AC) for ACM CHI'16, 17, 18, 19, 20;  
Program Committee (AC) for ACM CSCW'16, 17, 18, 19, 20;  
Reviewer for 100+ papers CHI, CSCW, ECSCW, GROUP, HRI, UIST, IUI, iConference ...

### **University Service**

Graduate Student Welcoming Weekend at the University of California Irvine (2014, 2015)  
Vice President, Student Association at Beijing University of Technology (2007 - 2008)  
Organizer, Student Project Competition and Fundraising for Social Engagement (\$50K) (2006)

## **SYSTEMS AVAILABLE TO THE PUBLIC**

**DocuViz2**, Chrome Plugin Store.

A Chrome browser plugin that provides more accurate visualization in a more secured way. It is not an advanced version of DocuViz; rather, it is an entirely new tool using a different data source, a different architecture, and a different algorithm.

## **REFERENCES**

### **Judith S. Olson**

Professor Emerita, University of California Irvine  
Member of National Academy Engineering, ACM Fellow  
jsolson@uci.edu

### **Thomas Erickson**

Retired Research Staff Member, IBM Research  
ACM Fellow  
tom@toimeri.org

### **Michael Muller**

Research Staff Member, IBM Research  
ACM Distinguished Scientist  
michael\_muller@us.ibm.com

### **Gary M. Olson**

Professor Emeritus, University of California Irvine  
ACM Fellow, APA Fellow, APS Fellow  
gary.olson@uci.edu