Dakuo Wang

Curriculum Vitae

MIT-IBM Watson AI Research Lab
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www.dakuowang.com

RESEARCH INTERESTS

Human-computer interaction, computer-supported cooperative work, human-AI collaboration

EDUCATION

Ph.D., Information and Computer Science, University of California Irvine, CA 2016
Dissertation: *Exploring and Supporting Today's Collaborative Writing*
Committee: Judith S. Olson (Chair), Gary M. Olson, Daniel Russell (Google)

Master of Science, Information and Computer Science**,** University of California Irvine, CA 2016

Master of Science, Electrical and Computer Engineering**,** University of California Irvine, CA 2012

Diplôme d'Ingénieur/M.S. Système Informatique**,** Ecole Centrale d'Electronique, Paris, FRANCE 2010

Bachelor of Science, Computer Science, Beijing University of Technology, Beijing, CHINA 2009

PROFESSIONAL EXPERIENCE

MIT-IBM Watson AI Lab, Principal Investigator, Cambridge, MA, U.S. 2019 — Now

IBM Research AI, Research Staff Member, Cambridge, MA, U.S. 2018 — Now

IBM T.J. Watson Research, Research Staff Member, Yorktown Heights, NY, U.S. 2016 — 2018

IBM China Research Lab, Research Intern, Beijing, CHINA Summer 2013

University of California Irvine, Research Assistant, CA, U.S. 2012 — 2016

France Telecom, System Engineer Intern, Paris, FRANCE, U.S. 2009 — 2011

PUBLICATIONS

Journal Publications

[J5] Fan, X., Chao, D., Zhang, Z., **Wang, D.,** Li, X., & Tian, F. (2021). Utilization of Self-Diagnosis Health Chatbots in Real-World Settings: Case Study. *Journal of Medical Internet Research,* 23(1), e19928.

[J4] Xu, Y., **Wang, D.,** Collins, P., Lee, H., & Warschauer, M. (2021). Same benefits, different communication patterns: Comparing Children's reading with a conversational agent vs. a human partner. *Computers & Education*, 161, 104059.

[J3] Zhang, Z., Genc, Y., Xing, A., **Wang, D.,** Fan, X., & Citardi, D. (2020). Lay individuals' perceptions of artificial intelligence (AI)‐empowered healthcare systems. *Proceedings of the Association for Information Science and Technology*, 57(1), e326.

[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)

[C24] Wang, L.*, **Wang, D.*,** Tian, F., Peng, Z., Fan, X., Zhang, Z., ... & Wang, H. (2021). CASS: Towards Building a Social-Support Chatbot for Online Health Community. *CSCW 2021*.

[C23] **Wang, D.,** Wang, L., Zhang, Z., Wang, D., Zhu, H., Gao, Y., et al. (2021). "Brilliant AI Doctor" in Rural China: Tensions and Challenges in AI-Powered CDSS Deployment. *CHI 2021*.

[C22] **Wang, D.,** Andres, J., Weisz, J., Oduor, E., & Dugan, C. (2021). AutoDS: Towards Human-Centered Automation of Data Science. *CHI 2021*.

[C21] Piorkowski, D., Park, S., Wang, A. Y., **Wang, D**., Muller, M., & Portnoy, F. (2021). How AI Developers Overcome Communication Challenges in a Multidisciplinary Team: A Case Study. *CSCW 2021*

[C20] Narkar, S., Zhang, Y., Liao, Q. V., **Wang, D.,** & Weisz, J. D. (2021). Model LineUpper: Supporting Interactive Model Comparison at Multiple Levels for AutoML. *IUI 2021*.

[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. *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. *IUI 2020.*

[C17] Floyd, F. and others. (2020) Next Steps for Human-Computer Integration: Challenges and Opportunities. *CHI 2020.*

[C16] Zhang, A., Muller, M., **Wang, D.** (2020) How Do Data Science Workers Collaborate? Roles, Workflows, and Tools. *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. *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 Practives 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 & Posters (Curated)

[W10] **Wang, D.,** Churchill, E., Maes, P., Fan, X., Shneiderman, B., Shi, Y., & Wang, Q. (2020). From Human-Human Collaboration to Human-AI Collaboration: Designing AI Systems That Can Work Together with People. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-6).

[W9] **Wang, D.,** et al. (2020). AutoAI: Automating the End-to-End AI Lifecycle with Humans-in-the-Loop. In Proceedings of the 25th International Conference on Intelligent User Interfaces Companion (pp. 77-78).

[W8] Chaudhary, A., Issak, A., Kate, K., Katsis, Y., Valente, A., **Wang, D.**, et al. (2021). AutoText: An End-to-End AutoAI Framework for Text. In *AAAI 2021*

[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

[P19] Daniel Weidele, Parikshit Ram, **Dakuo Wang**, Abel Valente, Arunima Chaudhary. Conditional Parallel Coordinates for Automated Artificial Intelligence with Constraints. IBM. Filed 2020. 16/832528

[P18] **Dakuo Wang**, Ming Tan, Chuang Gan, Jason Tsay, Gregory Bramble. TRANSFER LEARNING ACROSS AUTOMATED MACHINE LEARNING SYSTEMS. IBM Filed 2020. 16/806626

[P17] **Dakuo Wang**, Haoyu Wang, Chuang Gan, Ming Tan, Arunima Chaudhary, Lin Ju. A system and method to enable personalized automated machine learning (AutoAI or AutoML) systems with machine learning-based approach. IBM Filed 2020. 16/805019

[P16] Chuang Gan, Sijia Liu, Subhro Das, **Dakuo Wang**, Yang Zhang. Graph Convolutional Networks for Video Grounding. IBM Filed 2020.

[P15] Yang Zhang, Chuang Gan, **Dakuo Wang**. Generating synchronized sound from videos. IBM. Filed 2020. 16/744471.

[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 Watson 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
1st Place at Google Web Hackathon @ UCI	March 2015

TEACHING & INVITED TALKS

Human-AI Collaboration in Automated Machine Learning March 2020
Invited Talk at Pace University, U.S.A.

Human-AI Collaboration November 2019
Invited Talk at ACM SIGCHI China Chapter 15th Anniversary Symposium at Chinese Academy of Science, China.

Human-AI Collaboration October 2019
Guest Lecture at Peking University, China. Host: Prof. Baoquan Chen.

Introduction to HCI and CSCW. Summer 2019
CSCW Summer School at Fudan University, China.

Human-AI Collaboration as a New Paradigm of Human Computer Interaction. December 2018
Guest Lecture at Chinese Academy of Science, China. Host: Prof. Xiangmin Fan.

Human-AI Collaboration as a New Paradigm of Human Computer Interaction. Summer 2018
Feature talk at 14th ChineseCSCW in Guilin, China.

Today's and Future's Computer-Supported Cooperative Work September 2017
Guest Lecture at College of Computer Science, Fudan University, China. Host: Prof. Tun Lu.

INF 133: Projects in Human Computer Interaction Spring 2014
Teaching Assistant for Alfred Kobsa. Received 8.11/9.0 overall rating from student survey.

ICS 11: Internet Public Policy Winter 2014
Teaching Assistant for Geoffrey Bowker. Received 8.10/9.0 overall rating from student survey.

INF 131: User Interaction Software Design Fall 2013
Teaching Assistant for Donald Patterson.

Introduction to Human Computer Interaction and Computer-Supported Cooperative Work Summer 2013
Guest Lecture at College of Computer Science, Beijing University of Technology. Host: Hongyu Gao.

Introduction to Human Computer Interaction and Computer-Supported Cooperative Work Summer 2013
Guest Lecture at the School of Economic and Management, Beijing University of Posts and Telecommunications. Host: Lianju Ning.

ECE 10: Computer Methods in Electrical Computer Engineering Fall 2011
Teaching Assistant for Phillip Sheu.

MENTORING EXPERIENCE

List of Student Mentees

Zhixuan Zhou (Ph.D.) UIUC	2021
Bingsheng Arthur Yao (Ph.D.) RPI	2021
Yong Xie (Ph.D.) UIUC	2021
Soyun Park (Ph.D.) MIT	2020
Zan Li (Ph.D.) RPI	2020
April Yi Wang (Ph.D.) University of Michigan	2020
Xuye Liu (M.S.) RPI	2020
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

AAAI ICWSM 2021 Global Equity Chair	2021
ACM CHI 2022 Conference Co-Chair in Special Interest Group	2022
ACM CSCW 2022 Conference Co-Chair in Sponsorship	2022
ACM CSCW 2020 Conference Co-Chair in Demo	2020
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 (Associate/Area Chair) for ACM CHI'16, 17, 18, 19, 20, 21;
Program Committee (Associate/Area Chair) for ACM CSCW'16, 17, 18, 19, 20, 21;
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
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Michael Muller
Research Staff Member, IBM Research
ACM Distinguished Scientist
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Gary M. Olson
Professor Emeritus, University of California Irvine
ACM Fellow, APA Fellow, APS Fellow
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Wendy Kellogg
Retired Research Staff Member, IBM Research
ACM Fellow
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