

Tong Wang

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Google Scholar

EMPLOYMENT	Yale University, School of Management Assistant Professor of Marketing	New Haven, CT 2023 - PRESENT
	University of Iowa, Tippie College of Business Assistant Professor of Business Analytics (promotion and tenure awarded in 2023)	Iowa City, IA 2016 - 2023
EDUCATION	Massachusetts Institute of Technology Ph.D. in Computer Science M.S. in Electrical Engineering and Computer Science	Cambridge, MA 2012 - 2016 2010 - 2012
	Beijing University of Posts and Telecommunications B.S. in Electrical Engineering with <i>Highest Distinction</i>	Beijing, China 2006 - 2010
RESEARCH OVERVIEW	I work on two types of research. 1) I develop new interpretable machine learning models that enable human understanding of the decision-making processes. 2) I use machine learning methods to solve business problems, understand phenomena, or discover insights.	
PUBLICATIONS	† student under my supervision * corresponding author + Equal Contribution	
WORKING PAPERS	<ol style="list-style-type: none">1. Can Advanced LLMs Coach Smaller LLMs? Knowledge Distillation for Goal-Oriented Dialogs Tong Wang, K. Sudhir and Dat Hong2. Why it Works: Can LLM Hypotheses Improve AI Generated Marketing Content? Tong Wang, K. Sudhir and Hengguang Zhou3. Modeling Serialized Media Engagement Dynamics via Adversarial IRL with Content Embeddings Peter Lee, K. Sudhir and Tong Wang4. From Model Explanation to Data Misinterpretation: Uncovering the Pitfalls of Post Hoc Explainers in Business Research Ronilo Ragodos[†], Tong Wang[*], Lu Feng, and Yu Jeffrey Hu Major revision, Management Science	
PUBLISHED	MARKETING AND MANAGEMENT JOURNALS [J1]. Making Early and Accurate Deep Learning Predictions to Help Disadvantaged Individuals in Medical Crowdfunding Tong Wang , Fujie Jin, Lu Feng, Yuan Cheng, Yu Hu POM - <i>Production and Operations Management</i> , 2024 [J2]. Paralanguage Classifier (PARA): An Algorithm for Automatic Coding of Paralinguistic Nonverbal Parts of Speech in Text Andrea Luangrath, Yixiang Xu, Tong Wang JMR - <i>Journal of Marketing Research</i> , 2022	

- [J3]. Evaluating the Effectiveness of Marketing Campaigns for Malls Using A Novel Interpretable Machine Learning Model

Tong Wang, Cheng He, Fujie Jin, Yu Jeffrey Hu
ISR – *Information Systems Research*, 2021

TOP COMPUTER SCIENCE JOURNALS AND CONFERENCES

- [C1]. Improving Decision Sparsity
Yiyang Sun, **Tong Wang**, and Cynthia Rudin
NeurIPS – *Conference on Neural Information Processing Systems*, 2024
- [C2]. Sparse and Faithful Explanations Without Sparse Models
Zhi Chen, Yiyang Sun, Vittorio Orland, **Tong Wang**, and Cynthia Rudin
AISTATS - *Artificial Intelligence and Statistics Conference*, 2024
Winner of INFORMS 2023 Data Mining Best Paper Award General Track
- [J4]. Interpretable Text Classification Via Prototype Trajectory
Dat Hong[†], **Tong Wang***, Stephen Baek
JMLR – *Journal of Machine Learning Research*, 2023
- [C3]. ProtoX – Explaining a Reinforcement Learning Agent via Prototyping
Ronilo Ragodos[†], **Tong Wang***, Qihang Lin, Xun Zhou
NeurIPS – *Conference on Neural Information Processing Systems*, 2022
- [C4]. AdaAX - Explaining Recurrent Neural Networks by Learning Automata with Adaptive States
Dat Hong[†], Alberto Maria Segre, **Tong Wang***
KDD – *SIGKDD Conference on Knowledge Discovery and Data Mining*, 2022
- [J5]. Hybrid Predictive Model: When an Interpretable Model Collaborates with a Black-box Model
Tong Wang, Qihang Lin
JMLR – *Journal of Machine Learning Research*, 2021
Finalist, Best Paper Award at INFORMS Workshop on Data Mining & Decision Analytics, 2018.
- [C5]. Transparency Promotion with Model-Agnostic Linear Competitors
Hassan Rafique, **Tong Wang***, Qihang Lin, Arshia Sighani
ICML – *International Conference on Machine Learning*, 2020
Runner-up of Best Paper Awards at INFORMS Workshop on Data Science, 2019
- [C6]. Interpretable Companions for Black-box Classifiers
Dangqing Pan, **Tong Wang**, Satoshi Hara
AISTATS - *International Conference on Artificial Intelligence and Statistics*, 2020
- [C7]. Gaining Free or Low-Cost Interpretability with Interpretable Partial Substitute
Tong Wang
ICML - *International Conference on Machine Learning*, 2019
- [C8]. Multi-value Rule Sets for Interpretable Classification with Feature-Efficient Representations
Tong Wang
NeurIPS - *Conference on Neural Information Processing Systems*, 2018
- [J6]. A Bayesian Framework for Learning Rule Sets for Interpretable Classification
Tong Wang, Cynthia Rudin, Finale Doshi-Velez, Yimin Liu, Erica Klampfl, Perry MacNeille
JMLR – *Journal of Machine Learning Research*, 2017

OTHER PUBLICATIONS

- [C9]. ConPro-GAIL: Interpretable Policy Learning via Conceptual Prototyping for Human Spatiotemporal Decision Understanding
Ronilo Ragodos, Xun Zhou, **Tong Wang**, Yajun Pan, and Jun Luo
ACM SIGSPATIAL 2025

- [C10]. Bayesian Rule Sets for Interpretable Classification
Tong Wang, Cynthia Rudin, Finale Doshi-Velez, Yimin Liu, Erica Klampfl, Perry MacNeille
 ICDM – *The IEEE International Conference on Data Mining*, 2016
- [C11]. Learning to Detect Patterns of Crime
Tong Wang, Cynthia Rudin, Daniel Wagner, Rich Sevieri
 ECML/PKDD - *the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, 2013
Ideas from this paper were adopted by the New York Police Department and are running live in their Domain Awareness System (see article). Media coverage on WIRED, Boston Globe, etc
- [J7]. Finding Patterns with a Rotten Core: Data Mining for Crime Series with Core Sets
Tong Wang, Cynthia Rudin, Daniel Wagner, Rich Sevieri
Big Data, 2015
The Second Place for the INFORMS “Doing Good with Good OR” Award, 2015
- [J8]. PIE – A Partially Interpretable Model with Black-box Refinement
Tong Wang, Yunyi Li, Jingyi Yang, Boxiang Wang
 IJOC - *INFORMS Journal on Computing*, Accepted
- [J9]. Same-Day Delivery with Fair Customer Service
 Xinwei Chen, **Tong Wang**, Barrett Thomas, Marlin W. Ulmer
 EJOR - *European Journal on Operational Research*, 2022
- [J10]. Disjunctive Rule Lists
 Ronilo Ragodos[†], **Tong Wang**^{*}
 IJOC - *INFORMS Journal on Computing*, 2022
- [J11]. Causal Rule Sets for Identifying Subgroups with Enhanced Treatment Effect
Tong Wang, Cynthia Rudin
 IJOC – *INFORMS Journal on Computing*, 2022
- [J12]. A Holistic Approach to Interpretability in Financial Lending: Models, Visualizations, and Summary-Explanations
 Chaofan Chen, Kangcheng Lin, Cynthia Rudin, Yaron Shaposhnik, Sijia Wang, **Tong Wang**
 (Author names are listed alphabetically)
 DSS – *Decision Support Systems*, 2021
Winner of FICO Recognition Award in FICO xML Challenge, 2018
- [J13]. Dental Anomaly Detection Using Intraoral Photos Via Deep Learning
 Ronilo Ragodos[†], **Tong Wang**^{*}, George L. Wehby, Seth M. Weinberg, Deborah V. Dawson, Mary L. Marazita, Lina M. Moreno Uribe, Brian J. Howe^{*}
Nature Scientific Reports, 2022
- [J14]. Humans in the Loop: Priors and Missingness on the Road to Prediction
 Anna Filippova, Connor Gilroy, Ridhi Kashyap, Antje Kirchner, Allison C. Morgan, Kivan Polimis, Adaner Usmani, **Tong Wang**
 (Author names are listed alphabetically)
Socius, 2019
- [J15]. Prevalence and Predictors of C. Difficile Infections in Those Who Had Major Surgical Procedures in USA: Analysis Using the Traditional and Machine Learning Methods
 Veerajalandhar Allareddy, **Tong Wang**, Sankeerth Rampa, Jennifer Caplin, Romesh P Nalliah, Aditya Badheka, Veerasathpurush Allareddy
American Journal of Surgery, 2018

PATENT

Medard, M., Ferner, U., and Wang, T., “Network Coded Storage With Multi-Resolution Codes”, US Patent App. 13/965,721. 2017.

PRESENTATIONS	<p>2025 - 2026 (including scheduled): Marketing Science Conference; Disney Data and Analytics Conference; INFORMS Annual Meeting; University of Massachusetts Amherst; AI and Collaborative Innovation @ NYU; The Ohio State University; AI and Collaborative Innovation Workshop; CIST</p> <p>2024 - 2025: University of Connecticut; Carnegie Mellon University; University of California at Berkeley; University of Rochester; Purdue University; BizAI; Symposium on Artificial Intelligence in Marketing; Virtual Quant Marketing Seminar; Conference on Artificial Intelligence, Machine Learning, and Business Analytics; Artificial Intelligence in Management; Offerfit, Inc</p> <p>2023 - 2024: Tsinghua University; Hongkong University; Chinese University of Hongkong; BizAI; Conference on Artificial Intelligence, Machine Learning, and Business Analytics; Four School Conference; Summer Workshop on AI for Business; HK Quant Marketing Conference; Fidelity Investments</p>	
FUNDED RESEARCH	<ul style="list-style-type: none"> • Co-PI for NSF Award: 21-530 Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science. 2023 • Interpretable Machine Learning for Assisting Electronic Chip Design, funded by InZone.AI, Jun - Aug, 2017; Jan - May, 2018 • Research Excellence Internal Grant, awarded by Tippie College of Business, April, 2019 	
SELECTED AWARDS	<p>Winner of the Data Mining Best Paper Award Competition. Oct, 2023</p> <p>Winner of the Best Paper Award at INFORMS Workshop on Data Science Nov, 2020</p> <p>Runner-up for the Best Paper Awards at INFORMS Workshop on Data Science Oct, 2019</p> <p>Research Excellence Award, Tippie College of Business, University of Iowa 2019</p> <p>FICO Recognition Award, FICO Explainable Machine Learning Challenge Dec, 2018</p> <p>Finalist for the Best Paper Awards at 13th INFORMS DM&DA Workshop Nov, 2018</p> <p>Second place winner of "Doing Good with Good OR", INFORMS Nov, 2015</p> <p>LinkedIn Intern Women in Tech Scholarship 2014</p> <p>Presidential fellowship – Joan and Irwin Jacobs fellowship, MIT 2010 - 2011</p> <p>Best Bachelor Thesis Award, BUPT 2010</p>	
TEACHING EXPERIENCE	<p>University of Iowa BAIS:3500 (Data Mining - Undergrad Level)</p> <p>University of Iowa BAIS:6070 (Data Science - MSBA Level)</p> <p>University of Iowa BAIS:7000 (Interpretable machine Learning - PhD Level)</p>	
INDUSTRY EXPERIENCE	<p>LinkedIn Mountain View, CA</p> <p>Data Science Intern at Search, Network and Analysis Team Jun - Aug, 2014</p> <p>Groupon Palo Alto, CA</p> <p>Data Science Intern at Merchant Engineering Team Jun - Aug, 2013</p>	
STUDENTS	<p>Shenghao Wang, PhD Candidate in Business Analytics</p> <p>Ronilo Ragodos, PhD Candidate in Business Analytics</p> <p>Dat Hong, PhD Candidate in Computer Science</p>	
ACADEMIC SERVICES	<p>GRANT REVIEW</p> <p>National Science Foundation Panelist 2019 and 2021</p> <p>ORGANIZING ROLES</p> <p>Cluster chair for Making Sense of AI Cluster, INFORMS Annual Meeting 2022</p> <p>Web chair for Workshop on Information Technologies and Systems 2021</p> <p>Co-chair for 2019 INFORMS Workshop on Data Mining and Analytics 2019</p> <p>Chair for Data Mining Best Paper Competition, INFORMS 2017, 2018</p> <p>Council member for Data Mining Section, INFORMS, 2016 - 2018</p> <p>Session chairs at INFORMS 2016 - 2022</p>	

REVIEW SERVICE

COMPUTER SCIENCE CONFERENCES AND JOURNALS

Area Chair for FAccT

2023

Reviewer for JMLR, NeurIPS, ICML, ICLR, AISTATS, AAAI, IJCAI, FATML, TKDE, Machine Learning Journal, etc

BUSINESS JOURNALS

Associate Editor, INFORMS Journal on Computing

2023 - present

Reviewer for Management Science, Information Systems Research, MIS Quarterly, Manufacturing & Service Operations Management, Production and Operations Management