# Xiaohan Ding

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## Research Interests

Ph.D. candidate at the intersection of HCI, NLP, and Computational Social Science. My research investigates the societal impacts of digital discourse, specifically **polarization, misinformation, and online harms**, and designs **human-AI collaborative systems** to support constructive communication and public health.

## Education

- **Virginia Tech** — *Sep 2021 - May 2026*
  *Ph.D. in Computer Science* — Blacksburg, VA, USA
  ◦ Advisor: Dr. Eugenia H. Rho
- **George Mason University** — *May 2019 - May 2021*
  *MS in Computer Science* — Fairfax, VA, USA
  ◦ Advisor: Dr. Gheorghe Tecuci
- **University of Jinan** — *Jun 2014 - Aug 2018*
  *BS in Network & Software Engineering* — Jinan, Shandong, China
  ◦ Advisor: Dr. Kun Liu

## Patents and Publications

C=Conference, J=Journal, P=Patent, S=In Submission

**[S.2]** **Xiaohan Ding**, Kaike Ping, and Eugenia H Rho. (2026). **A Longitudinal Benchmark Corpus of U.S. Cable News for Topic, Polarization, and Semantic Shift Analysis**. Manuscript submitted for publication in *Association for Computational Linguistics. ACL 26'*.

**[S.1]** **Xiaohan Ding**, Kaike Ping, Buse Carik, James Hawdon, and Eugenia H Rho. (2026). **Measuring Counterspeech Effectiveness: Rhetorical Strategies and Identity Alignment Predict Persuasion**. Manuscript submitted for publication in ACM Transactions on Computer-Human Interaction (TOCHI).

**[C.12]** **Xiaohan Ding**, Kaike Ping, Buse Carik, and Eugenia H Rho. (2025). A Multi-Level Benchmark for Causal Language Understanding in Social Media Discourse. Empirical Methods in Natural Language Processing, *EMNLP 25'*.

**[C.11]** **Xiaohan Ding**, Kaike Ping, Uma Sushmitha Gunturi, Buse Carik, Sophia Stil, Lance T Wilhelm, Taufiq Daryanto, James Hawdon, Sang Won Lee, Eugenia H Rho. (2025). Designing Human-AI Collaboration to Support Learning in Counterspeech Writing. IEEE Symposium on Visual Languages and Human-Centric Computing, *VLHCC 25'*.

**[C.10]** Taufiq Daryanto, **Xiaohan Ding**, Lance T Wilhelm, Sophia Stil, Kirk Knutsen, and Eugenia Rho. (2025). Conversate: Supporting Reflective Learning in Interview Practice Through Interactive Simulation and Dialogic Feedback. IEEE Symposium on Visual Languages and Human-Centric Computing, *VLHCC 25'*.

**[C.9]** Buse Carik, Victoria Izaac, **Xiaohan Ding**, Angela Scarpa and Eugenia H. Rho. (2025). Reimagining Support: Exploring Autistic Individuals' Visions for AI in Coping with Negative Self-Talk. *ACM Conference on Human Factors in Computing Systems (CHI 25')*.

**[J.3]** Kaike Ping, Anisha Kumar, **Xiaohan Ding**, Eugenia Rho. (2024). Behind the Counter: Exploring the Motivations and Barriers of Online Counterspeech Writing. *ACM Transactions on Computer-Human Interaction*.

**[C.8]** **Xiaohan Ding**, Buse Carik, Uma Gunturi, Eugenia H. Rho. (2024). Predicting Pandemic Health Decisions and Outcomes Through Social Media Language: A Fuzzy-Trace Theory Approach Leveraging Large Language Models. In *Conference on Human Factors in Computing Systems (CHI) Proceedings*.

**[C.7]** Uma Sushmitha Gunturi, Anisha Kumar, **Xiaohan Ding**, Eugenia H. Rho. (2024). Linguistically Differentiating Acts and Recalls of Racial Microaggressions on Social Media. In *The 26th ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW) Proceedings*.

**[C.6]** **Xiaohan Ding**, Michael Horning, Eugenia H Rho. (2023). Same Words, Different Meanings: Semantic Polarization in Broadcast Media Language Forecasts Polarity in Online Public Discourse. In *17th Proceedings of the International AAAI Conference on Web and Social Media (AAAI ICWSM)*.

**[C.5]** **Xiaohan Ding**, Uma Gunturi, Eugenia H Rho. (2023). ToxVis: Enabling Interpretability of Implicit vs. Explicit Toxicity Detection Models with Interactive Visualization. In *Conference on Human Factors in Computing Systems (CHI), Combating Toxicity, Harassment, and Abuse in Online Social Spaces Workshop*.

**[C.4]** Xu Wu, Xin Zhao, **Xiaohan Ding**, Lin Wang, Bo Yang, Mazharul Islam, Xiaojing Zhango. (2020). Estimation of Water-cement Ratio of Hardened Cement Paste Based on Microstructure Image and Convolutional Neural Network. In *2020 7th International Conference on Information, Cybernetics, and Computational Social Systems (ICCSS) Proceedings*.

**[J.2]** Gheorghe Tecuci, Dorin Marcu, Anya Parekh, **Xiaohan Ding**. (2020). sInvestigator: Facilitating Inquiry-based Teaching and Learning of Critical Thinking Skills. *Innovations in Teaching & Learning Conference Proceedings*.

**[J.1]** Yuyang Cai, **Xiaohan Ding**, Wei Li, Dunyu Liu, Jun Chen, Mingguo Ni, Kailong Xu, Jing Jin. (2020). Removal and recovery of SO2 and NO in oxy-fuel combustion flue gas by calcium-based slurry. *E3S Web of Conferences*.

**[C.3]** Kun Liu, Kun Ma, **Xiaohan Ding**, Mingguo Ni, Kailong Xu, Jing Jin. (2017). Design of Teaching Aid System based on WeChat Public Platform. In *2017 3rd Conference on Education and Teaching in Colleges and Universities (CETCU) Proceedings*.

**[C.2]** Kun Liu, Jinmin Jiang, **Xiaohan Ding**, Hui Sun. (2017). Design and development of management information system for research project process based on front-end and back-end separation. In *2017 International Conference on Computing Intelligence and Information System (CIIS 2017) Proceedings*.

**[C.1]** Kun Liu, Hanjing Liu, **Xiaohan Ding** (2017). The Application of Data Mining Technology in Data Service of Micro Service Architecture. In *2017 3rd International Conference on Social Science, Management and Economics (SSME) Proceedings*.

## Experience

- **Generative AI Researcher | Virginia Tech** *May 2023 – May 2024*
  *Part-Time | Technology-enhanced Learning & Online Strategies (TLOS)* Blacksburg, VA, USA
  - Collaborated with instructional designers to implement AI-aware teaching strategies in Virginia Tech's Canvas LMS
  - Created a comprehensive knowledge base for faculty on managing generative AI tools in academic settings
- **Guest Instructor [🌐]** *Aug 2023 - 2025*
  *Virginia Tech | Department of Computer Science* Blacksburg, VA, USA
  - Delivered hands-on tutorials for CS 5914: Human-AI Interaction Powered by Large Language Models (LLMs)
  - Conducted six instructional sessions covering LLM techniques, including instruction tuning, fine-tuning, multi-model LLM systems, and deployment strategies
- **Jinan Kingmon Information Technology Co., LTD [🌐]** *May 2018 - Dec 2018*
  *Part-Time | Software Engineer Intern* Jinan, Shandong, China
  - Developed a blockchain-based credential verification system for student transcripts, reducing fraud cases by 40% and cutting manual verification time by 65%
  - Built a student performance analytics dashboard using Python/Flask, helping educators identify at-risk students 3 weeks earlier than previous methods

## Research Projects

- **Generative AI Research for Virginia Tech Canvas System** *May 2023 - May 2024*
  *Tools: Large Language Models (LLMs), Canvas API, Natural Language Processing, Text Summarization*
  - Spearheaded integration of Large Language Models into VT Canvas system in collaboration with Technology-Enhanced Learning and Online Strategies (TLOS)
  - Developed LLM-powered text summarization and simplification tools for student academic support
  - Created faculty-facing tools leveraging LLMs for automatic summarization of learning objectives and educational content
- **EmotionAIze: Empathy-Driven Human-AI System for Autistic Individuals** *April 2024 - Present*
  *Tools: Generative AI, Natural Language Processing, Human-Computer Interaction, Mental Health Analytics*
  - Developed interactive Human-AI system supporting mental well-being of neurodiverse individuals, focusing on autism spectrum
  - Implemented contextual, empathetic counter-response generation to address negative self-talk (NST) patterns
  - Created multi-modal interaction framework respecting unique needs of autistic individuals during life transitions
- **Health Decision Analysis Through Instruction Tuning LLMs** *November 2022 - May 2023*
  *Tools: LLMs, Instruction Tuning, Social Media Analytics, Statistical Analysis*
  - Developed multi-step reasoning framework using prompt-based LLMs to correlate social media language with national health outcomes
  - Implemented fuzzy-trace theory-grounded analysis for extracting causal coherence in health measure opposition discussions
  - Analyzed large-scale social media datasets to establish empirical links between linguistic patterns and public health trends
  - Created predictive models for health decision-making behaviors during pandemic scenarios
- **TV News and Social Media Discourse Analysis via Language Models** *August 2022 - June 2024*
  *Tools: Embedding Models, Granger Causality Analysis, Twitter API, Natural Language Processing, Semantic Analysis*

- Investigated relationship between TV news language polarization and Twitter semantic polarity trends using embedding models
- Applied Granger causality testing to validate significant semantic relationships between broadcast media and social media discourse
- Established empirical framework for measuring media influence on online audience discourse behavior

## Honors and Awards

- **Pratt Fellowship** *September 2024 - May 2025*
  *Award: Additional stipend funding totaling $1,065.92*
  - Awarded based on academic excellence and research contributions in graduate studies
- **2023 M-Enabling Summit** *October 2023*
  *Award: Additional stipend funding totaling $1,820.00*
  - Awarded based on research findings on accessible AI systems for neurodiverse populations
- **Excellent Graduate of University of Jinan** *June 2018*
  *Recognition: Top academic performance and leadership*
- **First-Class Undergraduate Scholarship** *January 2016 - January 2018*
  *Award: Academic excellence recognition (Multiple years)*
- **Third Prize: National Internet Software Design Competition** *June 2017*
  *Competition: National-level software development contest for college students*
  - Achieved third place in prestigious national competition among college students across China

## Academic Service

- **Associate Chair (AC)**, DIS PWiP 2025 *2025*
- **Conference Reviewer** *2023 - Present*
  - CHI 2025, GROUP 2025
  - EMNLP 2024, CHI 2024, CSCW 2024, ICWSM 2024
  - IEEE ISMAR 2023, IEEE VIS 2023, ICWSM 2023, MLIS 2023
- **Journal Reviewer** *2024 - Present*
  - Journal of Data and Information Science
  - Pattern Recognition

## Service and Memberships

- **Accessible Learning Student Services & Web Accessibility Development** *May. 2023 - May. 2024*
  - Technology-Enhanced Learning and Online Strategies | Virginia Tech
  - Services for Students with Disabilities – Virginia Tech
  - Universal Design for Learning (UDL) Workshop
- **International Association of Accessibility Professionals (IAAP)** *May. 2023 - Present*