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🌐 <https://scholar.google.com/citations?user=MgxFi7QAAAAJ&hl=en>

EDUCATION

- 2022.08 – 2025.08 (expected) **Pennsylvania State University**, University Park, USA
Doctor of Philosophy in Informatics
Stage: Passed Qualifying Exam, GPA 4/4.0
- 2020 – 2021 **Auckland University of Technology**, Auckland, New Zealand
Master of Science in Computer and Mathematical Sciences with First-Class Honors
- 2016 – 2019 **Massey University**, Auckland, New Zealand
Bachelor of Science with double majors in Computer Science and Data Science

PUBLICATIONS

Peer-reviewed Conference Papers:

- [c.6] Xie, J., Yu, R., **Zhang, H.**, Lee, S., Billah, S. M., & Carroll, J. M. (2024, May) BubbleCam: Engaging Privacy in Remote Sighted Assistance. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*.
- [c.5] Cai, J., Lin, Y., **Zhang, H.**, & Carroll, J. M. (2024, May) Third-Party Developers and Tool Development for Community Management on Live Streaming Platform Twitch. In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*. [10.1145/3613904.3642787](https://doi.org/10.1145/3613904.3642787)
- [c.4] **Zhang, H.**, Li, X., Sun, Y., Fu, X., Qiu, C., & Carroll, J. M. (2024, March) VRMN-bD: A Multi-modal Natural Behavior Dataset of Immersive Human Fear Responses in VR Stand-up Interactive Games. In *2024 IEEE Conference Virtual Reality and 3D User Interfaces (VR)*.
- [c.3] **Zhang, H.**, & Carroll, J. M. (2024, April) Exploring Virtual Reality through Ihde's Instrumental Realism. In *International Conference on Information*.
- [c.2] Lyu, Y., **Zhang, H.**, & Carroll, J. M. (2023, Nov). Reconnecting An International Travel Network: The Personal Infrastructuring Work of International Travelers in A Multi-facet Crisis. *The Eleventh International Symposium of Chinese CHI (ChCHI 2023)*. *arXiv preprint* [arXiv:2308.14014](https://arxiv.org/abs/2308.14014)
- [c.1] Haq, E. U., Braud, T., Lee, L. H., Mogavi, R. H., **Zhang, H.**, & Hui, P. (2022, June). Tips, Tidings, and Tech: Governmental Communication on Facebook During the COVID-19 Pandemic. In *DG. O 2022: The 23rd Annual International Conference on Digital Government Research* (pp. 105-117). [10.1145/3543434.3543642](https://doi.org/10.1145/3543434.3543642)

Peer-reviewed Posters:

- [p.2] **Zhang, H.**, Li, X., Qiu, C., & Fu, X. (2023, Nov). Decoding Fear: Exploring User Experiences in Virtual Reality Horror Games. In *The Eleventh International Symposium of Chinese CHI (ChCHI 2023)*. [10.1145/3629606.3629646](https://doi.org/10.1145/3629606.3629646)
- [p.1] **Zhang, H.**, Ananda, R., Fu, X. Sun, Z., Wang, X., Chen, K., & Carroll, J. M. (2023, Nov). Multi-channel Sensor Network Construction, Data Fusion and Challenges for Smart Home. In *The Eleventh International Symposium of Chinese CHI (ChCHI 2023)*. [10.1145/3629606.3629638](https://doi.org/10.1145/3629606.3629638)

Peer-reviewed Journal Papers:

- [j.2] Fu, X., **Zhang, H.**, Xue, C., Sun T., Xu, Y.-Q. (2023, May). A Review of the Frontier Research on Future Smart Home. *Science & Technology Review*. 41(8), 36-52. [10.3981/j.issn.1000-7857.2023.08.004](https://doi.org/10.3981/j.issn.1000-7857.2023.08.004)
- [j.1] Fu, X., **Zhang, H.**, Xue, C., Li, X., Sun, Z., & Xu, Y.-Q. (2022, Aug). Design Research and Practice of Integrated Experimental Platform for Smart Home. *Packaging Engineering*, 43(16), 50–58. [10.19554/j.cnki.1001-3563.2022.16.005](https://doi.org/10.19554/j.cnki.1001-3563.2022.16.005)

Latest Work (Preprint):

- [arXiv.2] **Zhang, H.**, Wu, C., Xie, J., Kim, C., & Carroll, J. M. (2023). QualiGPT: GPT as an easy-to-use tool for qualitative coding. *arXiv preprint* [arXiv:2310.07061](https://arxiv.org/abs/2310.07061)
- [arXiv.1] **Zhang, H.**, Wu, C., Xie, J., Lyu, Y., Cai, J., & Carroll, J. M. (2023). Redefining Qualitative Analysis in the AI Era: Utilizing ChatGPT for Efficient Thematic Analysis. *arXiv preprint* [arXiv:2309.10771](https://arxiv.org/abs/2309.10771)

Patents:

- [patent.2] Fu, X., Xu, Y.-Q., **Zhang, H.**, Xue, C., He, S., Sun, Z., Gao, Y. Smart Home Comprehensive Experiment System and Data Processing Method: China, 2022-09
- [patent.1] Fu, X., Xu, Y.-Q., **Zhang, H.**, Xue, C., Sun, Z., Gao, Y., He, S. A Human-Machine Interaction System for Smart Home Environments, and Its Application Method: China, 2022-07

FUNDS, AWARDS AND HONORS

- 2023 Special Recognitions for Outstanding Reviews
CHI 2024 Papers
- 2023 [BIG \(Big Ideas Grant\) Seed Funding](#), Penn State University, USA (USD \$49,935)
- 2022 – 2023 Teaching Assistantship, Penn State University, USA
- 2021 [Callaghan Innovation R&D Fellowship](#), New Zealand (NZD \$7,625)
- 2018 Class Advocate (Certificate), Massey University, New Zealand

SERVICE

Program Committee Member

- 2024 ACM Learning at Scale Conference (L@S)
- 2023 International Conference on Affective Computing Intelligent Interaction (ACII)
Annual International Conference on Digital Government Research (DG.O)
The International Symposium of Chinese CHI (ChCHI)
- 2022 Annual International Conference on Digital Government Research (DG.O)

Conferences Reviewer

2022 - 2024 ACM CHI
2023 - 2024 ACM CSCW
2024 IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR)
2023 The Annual Symposium on Computer-Human Interaction in Play (CHI PLAY)
ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)
ACM Symposium on Virtual Reality Software and Technology (VRST)
IEEE International Symposium on Mixed and Augmented Reality (ISMAR)
ACM Learning at Scale Conference (L@S)
International Semantic Web Conference (ISWC)
AIS International Conference on Information Systems (ICIS)
ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)

Journals Reviewer

2024 Policy Studies Journal (IF=5.1)
Multimedia Tools and Applications (IF=3.6)
2023 Computers in Human Behavior (IF=9.9)

RESEARCH EXPERIENCE

2022 – Present *Research Assistant*, Collaboration and Innovation Laboratory (CIL),
Pennsylvania State University, PA
Advisor: John M. Carroll, Ph.D.

- Led the LLMxGenAI project, which employed qualitative (interviews, focus groups, and observations), quantitative (statistics and data analysis), and programming methods to enhance understanding of LLMs (Large Language Models) and generative AI, promoting Human-AI collaboration and explainable AI.
- Participated as a core member in the C4V project, aimed at advancing the well-being of people with low vision through user research and prototype development.

2021 – 2022 *Research Assistant* (Full-time), The Future Laboratory, **Tsinghua University**,
P.R. China
Advisor: Ying-Qing Xu, Ph.D., Xinyi Fu, Ph.D. and Qianyao Xu, Ph.D.

- Researched sentiment analysis in VR environments; performed multi-view pose recognition and analyzed physiological signals (ECG, EMG) with PCA, LSTM/RNN and tree-based models.
- Researched affective computing in smart home environments; performed environment set-up of two 2-bedroom apartments, collected non-performative multimodal (RGB, Depth, IR, Audio, Gait, etc.) data, and constructed a PB-level database.
- Investigated human-computer interaction through mobile devices; explored computational aesthetics, phone screen color studies (consistency of screen display), user preferences for screen brightness and color temperature adaptations.

- Researched the impact of smart home learning and sharing on the socialization of new older adults, particularly in terms of meeting social expectations. Related topics studied: community collaboration, psychosocial and group learning, etc.

2020 – 2021 *Research Assistant (Internship)*, HKUST-DT System and Media Laboratory (SyMLab), **Hong Kong University of Science and Technology (HKUST)**, Hong Kong (P.R. China)
Advisor: Pan Hui, Ph.D.

- Explored potential research directions and methods, collected, and cleaned data, performed PCA, built regression models (Poisson and negative binomial) for analysis, wrote and reproduced algorithms, created data visualizations, performed sentiment analysis based on NLP in multiple languages.

2020 – 2021 *Research Fellow*, **Callaghan Innovation**, New Zealand
Advisor: Nuttanan Wichitaksorn, Ph.D.

- Retrieved and cleaned data from real enterprise SQL databases, performed PCA downscaling and multicollinearity, analyzed and predicted behavioral data using models including clustering algorithms, tree-based models, GLM models, MLP models and Cox proportional hazards models; improved model accuracy by 44% through behavioral data fusion.

PROFESSIONAL EXPERIENCE

Summer 2020 Data Scientist (Intern), Harmony, New Zealand
 Supervisor: Andrew Cathie

Jan 2020 – Jun 2020 Computer Technician (Full-time), PB Tech, New Zealand
 Supervisor: Jonathan Cai

Spring 2018 Database Administrator (Intern), Enring International, New Zealand
 Supervisor: Daniel Zou

LEADERSHIP AND ACTIVITIES

Jan 2020 – May 2020 *Data Analyst (Volunteer)*, Wuhan2020 Open-Source Community Project

Sep 2017 – Mar 2021 *Event Coordinator (Volunteer)*, TEDxAuckland, New Zealand

Aug 2019 – Sep 2019 *Primary School Curriculum Mentor (Volunteer)*, IVHQ, Fiji

Sep 2017 – Jul 2019 *Registered Volunteer*, Albany Students' Association, New Zealand

LANGUAGES AND SKILLS

English (fluent), Chinese - Mandarin (fluent), Python (proficient)