Hongyan Gu   Curriculum Vitæ

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Research Interest

I design, build, and evaluate human-AI collaborative digital pathology systems that integrate with pathologists' clinical workflows, incorporate their domain knowledge, and augment their diagnostic capabilities. In doing so, I aim to establish a new paradigm in digital pathology that fosters efficient, accurate, and safe human-AI collaboration, enabling timely, cost-effective, and precise histopathological diagnoses that ultimately enhance clinical decision-making and improve patient management.

Professional Experience

05/2025 – Present   **University of Kansas Medical Center**
Senior Scientist – Digital Pathology
Department of Pathology and Laboratory Medicine

Education

09/2019 – 03/2025   **University of California, Los Angeles**
Ph.D. in Electrical and Computer Engineering
Thesis: *Supporting Diagnosis of Pathologists with Human-AI Collaboration*
Advisor: Xiang 'Anthony' Chen; Committee: Corey Arnold, Lei He, Lin Yang

09/2017 – 06/2019   **University of California, Los Angeles**
M.Sc. in Electrical and Computer Engineering
Department of Electrical and Computer Engineering

09/2013 – 06/2017   **Zhejiang University**
B.Eng. in Automation
Department of Control Science and Engineering

Peer-Reviewed Journal and Conference Publications

ISBI '25   **Z-Stacking can Improve AI Detection of Mitosis: A Case Study of Meningiomas**
Hongyan Gu, Ellie Onstott, Tengyou Xu, Zida Wu, Wenzhong Yan, Xiang 'Anthony' Chen, Mohammad Haeri.
To appear *21st IEEE International Symposium on Biomedical Imaging (ISBI 2025)*.

IJHCS '24   **Majority Voting of Doctors Improves Appropriateness of AI Reliance in Pathology.**
Hongyan Gu, Chunxu Yang, Shino Magaki, Neza Zarrin-Khameh, Nelli S. Lakis, Inma Cobos, Negar Khanlou, Xinhai R. Zhang, Jasmeet Assi, Joshua T. Byers, Ameer Hamza, Karam Han, Anders Meyer, Hilda Mirbaha, Carrie A. Mohila, Todd M. Stevens, Sara L. Stone, Wenzhong Yan, Mohammad Haeri, Xiang 'Anthony' Chen.
International Journal of Human-Computer Studies, 103315.

ICHI '24 **Supporting Mitosis Detection AI Training with Inter-Observer Eye-Gaze Consistencies.**
Hongyan Gu, Zihan Yan, Ayesha Alvi, Brandon Day, Chunxu Yang, Zida Wu, Shino Magaki, Mohammad Haeri, Xiang 'Anthony' Chen.
IEEE 12th International Conference on Healthcare Informatics (ICHI) (pp. 40-45). IEEE.

MedIA '24 **Domain Generalization across Tumor Types, Laboratories, and Species – Insights from the 2022 Edition of the Mitosis Domain Generalization Challenge.**
Marc Aubreville, …, **Hongyan Gu**, …, Christof A. Bertram.
Medical Image Analysis. (2024): 103155.

ANC '24 **Enhancing Mitosis Count Assessment in Meningiomas with Computational Digital Pathology.**
Hongyan Gu, Chunxu Yang, Issa Al-kharouf, Shino Magaki, Nelli Lakis, Christopher Kazu Williams, Sallam Mohammad Alrosan, Ellie Kate Onstott, Wenzhong Yan, Negar Khanlou, Imna Cobos, Xinhai Robert Zhang, Neda Zarrin-Khameh, Harry V. Vinters, Xiang 'Anthony' Chen, Mohammad Haeri.
Acta Neuropathologica Communications. 12, 7 (2024).

CHI '23 **Augmenting Pathologists with NaviPath: Design and Evaluation of a Human-AI Collaborative Navigation System.**
Hongyan Gu, Chunxu Yang, Mohammad Haeri, Jing Wang, Shirley Tang, Wenzhong Yan, Shujin He, Christopher Kazu Williams, Shino Magaki, Xiang 'Anthony' Chen.
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems. Article 349, 1–19.
Best Paper Honorable Mention Award

LNCS '23 **Detecting Mitoses with a Convolutional Neural Network for MIDOG 2022 Challenge.**
Hongyan Gu, Mohammad Haeri, Shuo Ni, Christopher Kazu Williams, Neda Zarrin-Khameh, Shino Magaki, Xiang 'Anthony' Chen.
Lecture Notes in Computer Science, vol 13597, 211 – 216. Springer Cham.

TOCHI '23 **Improving Workflow Integration with xPath: Design and Evaluation of a Human-AI Diagnosis System in Pathology.**
Hongyan Gu, Yuan Liang, Yifan Xu, Christopher Kazu Williams, Shino Magaki, Negar Khanlou, Harry V. Vinters, Zesheng Chen, Shuo Ni, Chunxu Yang, Wenzhong Yan, Xinhai Robert Zhang, Yang Li, Mohammad Haeri, Xiang 'Anthony' Chen.
ACM Transactions on Computer-Human Interaction, 30, 2, Article 28 (April 2023).

CSCW '21 **Lessons Learned from Designing an AI-enabled Diagnosis Tool for Pathologists.**
Hongyan Gu, Jingbin Huang, Lauren Hung, Xiang 'Anthony' Chen.
Proceedings of the ACM on Human-Computer Interaction, 5 (CSCW1), 1-25.

Non-Archival Publications

USCAP '25 **Smart Pathology Assistant for Mitosis Quantification by Artificial Intelligence.**
Mohammad Haeri, **Hongyan Gu**, Chunxu Yang, Xiang 'Anthony' Chen.
Abstract: *USCAP '25.* March 22–27, 2025, Boston, Massachusetts. Laboratory Investigation, Volume 105, Issue 3, 103755

AANP '24 **Protecting Pathologists from Negligence while Working with Artificial Intelligence.**
Hongyan Gu, Shino Magaki, Nelli Lakis, Xiang 'Anthony' Chen, Mohammad Haeri.
Abstract: *100th Annual Meeting (American Association of Neuropathologists, AANP '24)* June 6–9, 2024, Olympic Valley, California. Journal of Neuropathology & Experimental Neurology, Volume 83, Issue 6, June 2024, Pages 427–563.

IUI EA '24 **A Human-AI Collaborative System to Support Mitosis Assessment in Pathology.**
Chunxu Yang, Mohammad Haeri, Shino Magaki, Neda Zarrin-Khameh, **Hongyan Gu**, Xiang 'Anthony' Chen.
Extended Abstract/Demo: *2024 ACM Conference on Intelligent User Interfaces* (IUI Companion '24).

CAP '23 **Mitosis Detection, Tumor Grading, and the Promise of Artificial Intelligence.**
Hongyan Gu, Xiang 'Anthony' Chen, Mohammad Haeri.
Abstract: *College of American Pathologists 2023 Annual Meeting (CAP23)*, Chicago, USA, Oct 7–10, 2023.
Arch Pathol Lab Med (2023) 147 (9): e2–e154.

ICN '23 **Mitotic Count and Tumor Grading Conundrum.**
Mohammad Haeri, **Hongyan Gu**, Xiang 'Anthony' Chen, Nelli Lakis, Issa Al-Kharouf, Neda Zarrin-Khameh, Xinhai Zhang, Negar Khanlou, Inma Cobos, Harry Vinters.
Abstract: *20th International Congress of Neuropathology*, Berlin, Germany, September 13–16, 2023. Brain Pathology, 33: e13194.

Awards and Scholarships

2024 **CESASC Scholarship**
Chinese-American Engineers and Scientists Association of Southern California, $1,000

2022, 2024 **Google Cloud Research Credit Grant**
Google, $1,000 credits

2023 **Dissertation Year Fellowship**
UCLA Graduate Division, $20,000

2023 **Doctoral Student Travel Grant**
UCLA Graduate Division, $1,000

2023 **Best Paper Honorable Mention Award**
ACM CHI 2023, top 5% submissions

2021 **Summer Mentored Research Fellowship**
UCLA Graduate Division, $6,000

2020 **Departmental Fellowship**
UCLA Department of Electrical and Computer Engineering, $18,000

2014, 2016 **Scholarship for Outstanding Merit**
Top 11% undergraduate students in the Department of Control Science and Engineering

Patents

P.3 **Systems and Methods for Mitosis Detection and Quantification Using Digital Pathology.**
Xiang Chen, **Hongyan Gu**, Mohammad Haeri, Shino Magaki.
U.S. provisional application 63/625,137, filed Jan 25, 2024

P.2 **An Obstacle-Avoiding Smart Car Using Override Control with Wireless Internet of Things.**
Dongqin Feng, **Hongyan Gu**, Xinze Liu.
C.N. application CN106959692B, filed Apr 10, 2017, issued Aug 9, 2019. *(In Chinese)*.

P.1 **An Internet-of-Thing Based Self-Controllable and Congestion-Awareness Smart Car Control System.**
Dongqin Feng, Xinze Liu, **Hongyan Gu**.
C.N. application CN107507422A, filed Aug 22, 2017. *(In Chinese)*.

Academic Service

Summary: 70 reviews in journals and conferences with four special recognitions of outstanding review (marked as asterisk *).

2023-present **Program Committee**
ACM CHI Conference on Human Factors in Computing Systems, Late Breaking Work: '23, '24, '25

2019-present **Reviewer**
Computers in Human Behavior
Heliyon, Cell Press
ACM CHI Conference on Human Factors in Computing Systems (CHI): '21*, '23*, '24*
ACM Computer-Supported Cooperative Work And Social Computing (CSCW): '22, '23
ACM Symposium on User Interface Software and Technology (UIST): '19, '20, '22, '23
ACM Intelligent User Interface (IUI): '23, '24
ACM Designing Interactive Systems (DIS): '23*
ACM Mobile Human-Computer Interaction (MobileHCI): '23
The Australian Conference on Human-Computer Interaction (ozCHI): '24

Teaching Experience

Teaching Assistant (Preparing & Hosting Discussion Sessions)

2021 Spring, **ECE 188: Applied & Interactive Machine Learning**
2024 Spring Electrical and Computer Engineering, University of California, Los Angeles

2020 Winter **ECE M16/CS M51A: Logic Design of Digital System**
Electrical and Computer Engineering, University of California, Los Angeles

Guest Lectures

Jul 2024 **Summer Institute CS97**
Computer Science, University of California, Los Angeles

Student Mentoring

*Students marked with asterisk * have co-authorship in publications under my mentorship.*

Ongoing Tengyou Xu* - M.S. student, ECE, UCLA

Class of 2025 Christian Giron-Michel - Undergraduate student, ECE, UCLA

Class of 2024 Chunxu Yang* - M.S., ECE, UCLA. Next: CS Ph.D. @ University of Waterloo
Uyenvy Nguyen - B.A. Cognitive Science, UCLA. Next: Urban Unity
Ellis McCormick - Post-Sophomore Fellow, University of Kansas Medical Center

Class of 2023 Brandon Day* - B.A. Cognitive Science, UCLA. Next: U.S. Bank
Ayesha Alvi* - B.A. Cognitive Science (pre-med), UCLA. Next: Postbac @ Yale
Ellie Onstott* - M.D. student, University of Kansas Medical Center

Class of 2022 Shirley Tang* - B.A. Cognitive Science, UCLA. Next: M.S. @ SJSU
Shuo Ni* - M.S. ECE, USC. Next: CS Ph.D. @ USC

Class of 2020 Yifan Xu* - M.S. ECE, UCLA. Next: Microsoft

Class of 2019 Lauren Hung* - B.F.A. Industrial Design, RISD. Next: M.S. @ CMU HCII
Jingbin Huang* - B.S. ECE, UCLA. Next: M.S. @ UCSD