Hongyan Gu   Curriculum Vitæ

1538 Boelter Hall
580 Portola Plaza
Los Angeles, CA 90095

https://hygu.net
+1 (310) 717-6735
ghy@ucla.edu

Research Interest

I design, build, deliver, and evaluate computational pathology systems that assist pathologists in histology examination, to enhance examination efficiency, improve diagnosis reliability, and protect doctors from over-reliance on AI. My Ph.D. research focuses on brain tumors of meningiomas and gliomas; both present complex histopathological features, making them challenging for neuropathologists to diagnose accurately with histological analyses alone. Recently, I have been conducting multiomics analyses for IDH-mutant astrocytomas.

Education

09/2019 – Present   **University of California, Los Angeles**
Ph.D. Candidate in Electrical and Computer Engineering
Proposed Dissertation: 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

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

Peer-Reviewed Journal and Conference Publications

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.

Manuscripts in Review & in Preparation

M.1 **Z-Stacking can Improve AI Detection of Mitosis: A Case Study of Meningiomas**
Hongyan Gu, Ellie Onstott, Wenzhong Yan, Tengyou Xu, Ruolin Wang, Zida Wu, Xiang 'Anthony' Chen, Mohammad Haeri.
In review *21st IEEE International Symposium on Biomedical Imaging (ISBI 2025).*

Non-Archival Publications

AANP '24 **Protecting Pathologists from Negligence while Working with Artificial Intelligence.**
Hongyan Gu, Shino Magaki, Nelli Lakis, Xiang 'Anthony' Chen, Mohammad Haeri.
Abstracts of the *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.
Abstracts and Case Studies from the *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.
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, Shnio 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: 58 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

2019-present **Reviewer**
Computers in Human Behavior
International Journal of Human-Computer Studies
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 Christian Giron-Michel - Undergraduate student, ECE, UCLA
Tengyou Xu* - M.S. student, ECE, UCLA

Class of 2024 Chunxu Yang* - M.S., ECE, UCLA. Next: University of Waterloo
Uyenvy Nguyen - Undergraduate student, Cognitive Science, UCLA
Ellis McCormick - M.D. student, University of Kansas Medical Center

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

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

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

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