

# Hongyan Gu Curriculum Vitae

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## Research Interest

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I design, build, and test human-AI collaboration systems that assist pathologists in histology examination, to enhance examination efficiency, improve diagnosis reliability, and protect doctors from over-reliance on AI. My research focuses on diseases of meningiomas and astrocytomas; both are brain tumors that present complex histopathological features, making them challenging for neuropathologists to diagnose accurately with histological analyses alone.

## Education

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- 09/2019 – **University of California, Los Angeles**  
*Present* 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 – **University of California, Los Angeles**  
06/2019 M.Sc. in Electrical and Computer Engineering
- 09/2013 – **Zhejiang University**  
06/2017 B.Eng. in Control Science and Engineering

## Peer-Reviewed Conference and Journal Papers

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- 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.  
To appear *2024 IEEE International Conference on Healthcare Informatics*.
- 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

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- M.1 **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.  
Submitted to *International Journal of Human-Computer Studies*.

## Non-Archival Publications

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- AANP '24 **Protecting Pathologists from Negligence while Working with Artificial Intelligence.**  
**Hongyan Gu**, Shino Magaki, Nelli Lakis, Xiang 'Anthony' Chen, Mohammad Haeri.  
Poster: *100th American Association of Neuropathologists (AANP '24)*.
- 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

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

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- 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

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*Summary: 56 reviews in HCI conferences with four special recognitions of outstanding review (marked as \*).*

- 2023-present **Program Committee**  
ACM CHI Conference on Human Factors in Computing Systems, Late Breaking Work: '23, '24
- 2019-present **Reviewer**  
ACM Symposium on User Interface Software and Technology (UIST): '19, '20, '22, '23  
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 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  
Heliyon, Cell Press

## Teaching Experience

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Teaching Assistant (Preparing & Giving Lectures)

- 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

## Student Mentoring

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

- Ongoing* Chunxu Yang\* - M.S. student, Electrical and Computer Engineering, UCLA  
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\* - Undergraduate student (pre-med), Cognitive Science, UCLA  
Ellie Onstott\* - M.D. student, University of Kansas Medical Center
- Class of 2022* Shirley Tang\* - Undergraduate student, Cognitive Science, UCLA. Next: Goodmaps  
Shuo Ni\* - M.S. Electrical and Computer Engineering, USC. Next: Ph.D. student at USC
- Class of 2020* Yifan Xu\* - M.S. Electrical and Computer Engineering, UCLA. Next: Microsoft
- Class of 2019* Lauren Hung\* - B.F.A. Industrial Design, RISD. Next: M.S. student at CMU HCII  
Jingbin Huang\* - B.S. Electrical and Computer Engineering, UCLA. Next: M.S. student UCSD