

# Ellen Yiyin Gu

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## Education

<b>Ph.D., Computer Science, Purdue University</b> Advisor: Dr. Voicu Popescu	2023 - expected 2028
<b>B.S., Computer Science (Honors), University of North Carolina at Chapel Hill</b> Minor in Mathematics and Cognitive Science Carolina Scholars (Full Scholarship) Member of Phi Beta Kappa (Selected in Junior Year)	2019 – 2023

## Research Projects

<b>Co-Located Immersive Visualization for Large Lectures</b> [1] Developed and evaluated in a user study (N = 82) an extended reality (XR) system for large lectures to enhance student engagement.	2024 - ongoing
<b>Stereoscopic Real-World Perspective Sharing for Collaborative Tasks</b> Developed and evaluated in a user study (N = 27) a stereoscopic XR visualization method to increase collaboration efficiency in real world scenes.	2024 - ongoing
<b>ACHIEVE: An Extended Reality System for AI Education</b> [2, 3, 4] Developing an XR platform for education in Artificial Intelligence, which visualizes neural networks to make abstract concepts more intuitive and accessible to learners.	2023 – ongoing
<b>Vision Aid Eyeglasses with Deep Scene Understanding</b> (with Dr. Praneeth Chakravarthula) Developed a voice-guided AR system for the visually impaired to provide hazard detection.	2020 – 2022
<b>Interaction with Information in Virtual Environments</b> (with Dr. Praneeth Chakravarthula) [5] Developed a virtual reality system to enhance information retrieval.	2020 – 2021

## Publications

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|---|------|
| 1. Kabir Batra, Zirui Zhang, Shuwen Yang, Arnima Agrawal, <b>Yiyin Gu</b> , Bedrich Benes, Alejandra Magana, Voicu Popescu. <i>XRXL: A System for Immersive Visualization in Large Lectures</i> . Accepted at IEEE VR 2025.   | 2025 |
| 2. Miguel A. Feijoo-Garcia, Yiqun Zhang, <b>Yiyin Gu</b> , Alejandra J. Magana, Bedrich Benes, Voicu Popescu. <i>Exploring Extended Reality (XR) in Teaching AI: A Comparative Study of XR and Desktop Environments</i> . Proc. 20th Int'l Joint Conf. on Computer Vision, Imaging & Computer Graphics Theory & Applications (GRAPP, HUCAPP, IVAPP), pp. 472-482, 2025. (HUCAPP 2025 <b>Best Paper Award</b> ). | 2025 |
| 3. Yiqun Zhang, Miguel A. Feijoo-Garcia, <b>Yiyin Gu</b> , Voicu Popescu, Bedrich Benes, Alejandra J. Magana. <i>Virtual and Augmented Reality in Science, Technology, Engineering, and Mathematics (STEM) Education: An Umbrella Review</i> . Information 2024, 15(9), 515; 10.3390/info15090515.  | 2024 |
| 4. <b>Yiyin Gu</b> , Miguel A. Feijoo-Garcia, Yiqun Zhang, Alejandra J. Magana, Bedrich Benes, Voicu Popescu. <i>An XR Environment for AI Education: Design and First Implementation</i> . IEEE VRW 2024; 10.1109/VRW62533.2024.00032.  | 2024 |
| 5. Austin R. Ward, <b>Yiyin Gu</b> , Sandeep Avula, Praneeth Chakravarthula. <i>Interacting with Information in Immersive Virtual Environments</i> . SIGIR '21; 10.1145/3404835.3462787.  | 2021 |

## Technologies

**Languages:** C#, C++, C, Python, Dart  
**Tools & Frameworks:** Unity3D, OpenCV, PyTorch, Flutter  
**Specializations:** Virtual Reality, Augmented Reality, Computer Vision