Max Chen

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EDUCATION

PhD in Computational Media Aug 2022 - Present
Worcester Polytechnic Institute (WPI), Worcester, MA
Advisors: Prof. Gillian Smith and Prof. Erin Solovey

Master of Science in Interactive Media & Game Development Aug 2020 – Dec 2022
Worcester Polytechnic Institute (WPI), Worcester, MA
Advisors: Prof. Gillian Smith and Prof. Erin Solovey

Bachelor of Engineering in Pharmaceutical Engineering Aug 2016 – June 2020
Wuhan University of Technology (WHUT), Wuhan, China

RELEVANT SKILLS AND COURSEWORK

Programming: C#, Python, MATLAB, JavaScript, C++, Java

Software and Tools: Unity, Unreal, Processing, GitHub, Plastic SCM, Unity Cloud, Adobe Creative Suite, Figma

Courses: Tangible and Embodied Interaction, Brain-Computer Interaction, Design of Interactive Experiences, Multidisciplinary Research Methods in Computational Media, System Dynamics, Learning Sciences

PUBLICATIONS

Journal Article

[J2] Shano Liang, **Max Chen**, Phoebe O. Toups Dugas, Gillian Smith, and Rose Bohrer. 2025. The Collaborative Sensemaking Play of Jubensha Games: A Deconstruction, Taxonomy, and Analysis. ACM Games Just Accepted (February 2025). https://doi.org/10.1145/3721121

[J1] **Max Chen**, Yichen Li, Hilson Shrestha, Noëlle Rakotondravony, Andrew Teixeira, Lane Harrison, and Robert E. Dempski. 2024. FlowAR: A Mixed Reality Program to Introduce Continuous Flow Concepts. Journal of Chemical Education 101, 5: 1865−1874. https://doi.org/10.1021/acs.jchemed.3c00807 (Featured on Cover)

Conference Articles

[C7] **Max Chen** and Edward Morrell. 2025. Exploring the Purpose and Development of Academic Games: Analyzing Games Reported in FDG Publications from 2007 to 2024. Foundations of Digital Games (FDG ‘25)

[C6] **Max Chen** and Gillian Smith. 2024. Game Development as Project-Based Learning: Synthesizing Postmortems of Student-Created Mobile Games. In Proceedings of the 19th International Conference on the Foundations of Digital Games (FDG '24). Association for Computing Machinery, New York, NY, USA, Article 38, 1–11. https://doi.org/10.1145/3649921.3649999

[C5] **Max Chen**, Dashiell Elliott, Robert Dempski, and Raúl Orduña Picón. 2024. Designing Interactive Virtual Tours for Education: Two Case Studies on Virtual Tours of the Chemistry and Biochemistry Laboratories. In Proceedings of the 19th International Conference on the Foundations of Digital Games (FDG '24). Association for Computing Machinery, New York, NY, USA, Article 50, 1–4. https://doi.org/10.1145/3649921.3656982

[C4] **Max Chen**, Shano Liang, and Gillian Smith. 2023. Stackable Music: A Marker-Based Augmented Reality Music

Synthesis Game. In Companion Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY Companion '23). Association for Computing Machinery, New York, NY, USA, 22–28. https://doi.org/10.1145/3573382.3616071

[C3] **Max Chen**, Yihong Xu, Alexander Sirois, Yichen Li, Robert Dempski, Gillian Smith, Yuko Oda, Yunus Telliel, Erika S. Lewis, and Kelilah L. Wolkowicz. 2023. WheelUp! Developing an Interactive Electric-power Wheelchair Virtual Training Environment. In 2023 IEEE Conference on Games (CoG), 1–6. https://doi.org/10.1109/CoG57401.2023.10333203

[C2] **Max Chen**, Erin Solovey, and Gillian Smith. 2023. Impact of BCI-Informed Visual Effect Adaptation in a Walking Simulator. In Proceedings of the 18th International Conference on the Foundations of Digital Games (FDG '23). Association for Computing Machinery, New York, NY, USA, Article 5, 1–8. https://doi.org/10.1145/3582437.3582448

[C1] **Max Chen** and Shamsnaz Virani Bhada. 2022. Converting natural language policy article into MBSE model. INCOSE International Symposium 32, S2: 73–81. https://doi.org/10.1002/iis2.12897

Workshop

[W1] Josiah Boucher, **Max Chen**, Gillian Smith and Yunus Telliel. 2024. Examining the Trajectory of Early Professionals' use of Generative AI in the Game Development Process from 2023 to 2024. EXAG 2024: AIIDE Workshop on Experimental AI in Games

Posters, Presentations & Panel Discussions

[P8] Accessible Worlds? Accessibility, Design, and the Right to Play. Panel Discussion at Foundations of Digital Games (FDG ‘25), Vienna & Graz, April 2025 (Collaborators: Jennifer deWinter, Hana Hanifah, Gillian Smith)

[P7] Extended Reality, Extending Chemistry Learning: Supporting Students in Understanding Safety and Molecular Polarity in the College General Chemistry Lab. 2025 Northeastern Chemistry Education Research Symposium (Collaborators: Dashiell Elliott, Claire Li, Robert Dempski, and Raúl Orduña Picón)

[P6] Use of AI by Researchers. Panel at WPI FORW-RD NRT Program, March 2025

[P5] Bridging Cultural Representation and Game Making: Analyzing the Experiences, Outcomes, and Lessons of Early-Stage Game Developers in a Professional Development Program. WPI Graduate Research Innovation Exchange 2025

[P4] Exploring the Complexity of Jubensha: A Taxonomy and Analysis of Chinese Murder Mystery Role-Playing Games. Foundations of Digital Games (FDG ‘24), Worcester, MA, USA, May 2024 (Collaborators: Shano Liang, Phoebe Toups Dugas, Gillian Smith, Rose Bohrer)

[P3] Integrating Biophysics Immersive Learning Tools Across Campus. Building a Network of Biophysics Education, Virtual, June 2022 (Collaborators: Robert Dempski, Claire Li, Shano Liang.)

[P2] Integrating Immersive Learning Tools across Campus and Beyond. Advanced Manufacturing and Processing Conference, Washington DC, June 2022 (Collaborators: Robert Dempski, Andrew Texeira, Claire Li, Shano Liang)

[P1] The Importation of Murder Mystery Games in China – Game Localization and Creativity. Canadian Game Studies Association Annual Conference, June 2022

Invited Talks

[T1] "Designing Exergames: Impact of Immersive Experience Beyond Engagement and Motivation". IEEE VR 2023 Workshop on VR for Exergaming (VR4Exergame 2023)

PROFESSIONAL EXPERIENCE

Research Assistant, WPI Academic & Research Computing, Worcester, MA
February 2021 - Present

- Provided AR/VR training & technical consultation to students and faculty.
- Led one internal training session on 3D virtual tour creation and two introductory augmented reality development training workshops.

Graduate Assistant, Massachusetts Digital Games Institute (MassDigi), WPI , MA
June 2024 – Aug 2024

- Mentored 42 students across 7 teams in creating mobile games during MassDigi's Summer Innovation Program (a professionalization program aimed at early-stage developers and college students in game development).
- Provided guidance on game design, development processes, and project management.

Research Intern, The Roux Institute, Northeastern University, Portland, ME
June 2023 – Aug 2023

- Conducted research using Emotibit and Empatica E4 to evaluate emotional responses in a simulated VR testing scene.

Senior Member, WPI Intentional Design Studio, Worcester, MA
September 2020 - Present

- Supervised 7 teams (14 students) working on websites, VR/AR apps, and educational games from ideation to maintenance.
- Provided mentorship and technical support to students, fostering a collaborative and innovative environment.
- Organized and led workshops and training sessions on best practices in design and development.

AWARDS, GRANTS, AND FUNDING

- MIT Reality Hack (2025) Art Grant: $500
- WPI Teaching Assistant (2023-2025)
- WPI Graduate Student Travel Award (2023): $500
- Foundations of Digital Games Travel Assistance Program (2023): $900
- Supporting WPI Women in STEM Education Research (2023): $11,478
- Third Place, WPI 14th Annual Sustainability Project Competition (2022): $500
- Mentor, Women in Research and Mentorship Program (2022): $1,500
- Outstanding Graduates, WHUT (2020)
- Second Prize Scholarship, WHUT (2017, 2019)
- Merit Student, School of Chemistry, Engineering and Life Science, WHUT (2019)
- Merit Student, Wuhan University of Technology (2017)

FEATURED PROJECTS

AR/VR for Education: 360 Labs | September 2020 – Present
360 Labs is a collection of mixed reality projects designed for chemistry labs, focused on outreach, safety training, and education. It explores innovative ways to integrate mixed reality into chemistry learning, enhancing student engagement, reinforcing lab safety through realistic, context-specific scenarios, and enabling hands-on practice with training materials displayed on head-mounted goggles. This project has led to one FDG conference article and one journal article.

Project-based Learning: Pedagogy Research on Game Development Program | August 2023 - Present
This project investigates the instructional strategies in game development programs at the undergraduate and high school levels. The primary aim is to identify the best practices in teaching and evaluating game design and development, with a focus on fostering creativity, technical skills, and teamwork among students. The research paper was published and presented at FDG 2024. Ongoing work is currently under review at CHI PLAY 2025.

Novel Inputs for Video Games: BCI-informed Game Visuals (MS Thesis) | October 2021 - December 2022
This project aims to explore the use of brain-computer interface (BCI)-adapted visual effects to support atmosphere in a walking simulator game and investigated its impact on player-reported immersive experience. I developed an open-sourced interface from fNIRS acquisition to Unity3D. The research paper was published and presented at FDG 2023.

SERVICES

Reviewer

Conferences: CHI Work'25, DIS '25, FDG ('24, '25), CHI ('25, '24), CHI PLAY '24, CoG '23
Journal: Interacting with Computers

Conference & Workshop Organization Committee

2025	Program Committee Member, CHI Work
2025	Co-organizer, 3rd Workshop on Academic Game Development, co-located with FDG '25
2025	Subcommittee Chair Assistant of CHI (Understanding People — Statistical and Quantitative Methods)
2024	Local Chair of the Foundations of Digital Games (FDG '24)

Other

2023 – 25	Graduate Student Representative for IMGD Graduate Program Committee
2023 – 25	Graduate Student Representative for IMGD Department Committee
2023	Workshop Organizer, WPI Women in STEM Conference
2022	Workshop Organizer, Latino Education Institute, Worcester State University

TEACHING AND MENTORING EXPERIENCE

Undergraduate Mentoring - Major Qualifying Projects

2024 -25	Jagger Polvino, James Cao, Andrew Nguyen. "Developing a Brain-Computer Interface to Enhance Storytelling in Games with the Identification of Cognitive States"
2023 -24	Amanda Jones, Megan Letendre, Elise Nerden. "Sewn into Memory: Reliving Feelings through an AR Quilt"

Undergraduate Mentoring – Research Projects

2024	Ian Tschida, Lana Acevedo
2024	Dashiell Elliott, co-published "Designing Interactive Virtual Tours for Education: Two Case Studies on Virtual Tours of the Chemistry and Biochemistry Laboratories" at FDG '24
2023	Reilly Desai
2022	Amanda Jones
2022	Yihong Xu, co-published "WheelUp! Developing an Interactive Electric-power Wheelchair Virtual Training Environment" at CoG '23

Women's Research and Mentorship Program (WRAMP)

2022	Rachel Foye, Ava Stockton, and Dinah Agyemang. "Food Chain AR: Co-design an Augmented Reality Book with Educators and Students"

Guest Lectures

2025	WPI IMGD 3100: Novel Interfaces for Interactive Environments, "Olfactory Displays"
2024	WPI IMGD 1001: The Game Development Process, "Arcade Games"
2024	WPI CH 421X: AI in the Molecular Life Sciences, "Integrating AI tools into Life Science Workforce Development Programs"
2024	WPI CS 525 / NEU 505 Special Topics in Computer Science: Brain-Computer Interaction, "Brain-computer Interfaces and Games"
2023-24	WPI Chapter Girls Talk Math, "Number Systems"
2023	WPI IMGD 3100: Novel Interfaces for Interactive Environment, "Brain-computer Interfaces and Games"
2022	Massachusetts College of Art and Design Artward Bound Program, "Implementing Augmented Reality to Emphasize the Impact of Climate Change"