John (Yuehan) Chen

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Summary

A learning researcher, designer, and practitioner with a strong academic background and a wealth of real-world experience. I lead the design and development of popular learning software that has reached millions of online, out-of-school learners worldwide. I use advanced AI in my design and to study my design. Throughout my work, I always learn from and work with learners of diverse ages and backgrounds.

Education

2019 - present	PhD student in Computer Science and Learning Sciences	
	Northwestern University	Evanston, IL
	Dissertation Advisor: Uri J. Wilensky	
2012 - 2016	Bachelor of Arts in Chinese Language and Literature	
	Beijing Normal University	Beijing, CN

Peer-Reviewed Publications

Chen, J., Lu, X., Du, Y., Rejtig, M., Bagley, R., Horn, M. S., & Wilensky, U. J. (2024). Learning Programming of Agent-based Modeling with LLM Companions: Experiences of Novices and Experts Using ChatGPT & NetLogo Chat. *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*.

Chen, J., Zhao, L., Li, Y., Xie, Z., Wilensky, U. J., & Horn, M. S. (2024). "Oh My God! It's Recreating Our Room!" Understanding Children's Experiences with A Room-Scale Augmented Reality Authoring Toolkit. *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*.

Chen, J., Horn, M. S., & Wilensky, U. J. (2023a). Interactive Constructionist Scaffolds for Agent-Based Modeling and Programming in NetLogo. *FabLearn / Constructionism 2023: Full and Short Research Papers*.

Chen, J., Horn, M. S., & Wilensky, U. J. (2023b). Tortuga: Building Interactive Scaffolds for Agent-based Modeling and Programming in NetLogo. *Proceedings of ISLS Annual Meeting 2023*.

Chen, J., Zhao, L., Horn, M. S., & Wilensky, U. J. (2023). The Pocketworld Playground: Engaging online, out-of-school learners with Agent-based Programming. *Proceedings of the ACM Interaction Design and Children (IDC) 2023*.

Chen, J., Zhao, L., Xiao, F., Horn, M. S., & Wilensky, U. J. (2022). Self-Governed Collaborative Inquiry in Action: A Case Study of a Large-Scale Online Youth Community. *Proceedings of ISLS Annual Meeting 2022*.

Manuscripts in Process

Chen, J., Zhao, L., Horn, M. S., & Wilensky, U. J. (In Preparation). Physics Lab: Designing online collaborative learning environment with and for youth. *Proceedings of the ACM Interaction Design and Children (IDC) 2025*.

Chen, J., Zhao, L., Lostos, A., Wilensky, U. J., Sherin, B., & Horn, M. S. (In Preparation). When LLMs meet the Grounded Theory: Generate and Evaluate Open-Ended Qualitative Codes through

Human-AI Collaboration. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems.*

Lightly-Reviewed Publications

Chen, J., Horn, M. S., & Wilensky, U. J. (2023). NetLogo AR: Bringing Room-Scale Real-World Environments Into Computational Modeling for Children. *Proceedings of the ACM Interaction Design and Children (IDC) 2023.*

Chen, J., & Wilensky, U. J. (2023a). ChatLogo: A Large Language Model-Driven Hybrid Natural-Programming Language Interface for Agent-Based Modeling and Programming. *Proceedings of FabLearn/Constructionism 2023.*

Chen, J., & Wilensky, U. J. (2023b). Measuring Young Learners' Open-ended Agent-based Programming Practices with Learning Analytics. *Presented at AERA Annual Meeting 2023.*

Li, Y., & Chen, J. (2023). Creative Expression through Color and Sound: A NetLogo Model for the Sonification of Color and the Visualization of Sound. *Proceedings of FabLearn/Constructionism 2023.*

Mongkhonvanit, K., Hummer, T. M., & Chen, J. (2023). Velo: Exploring Animal Behavior Modeling through Hybrid Robotics-Simulation Learning Experience. *Proceedings of the ACM Interaction Design and Children (IDC) 2023.*

Chen, J., & Wilensky, U. J. (2021). NetLogo Mobile: Introduction to A New Incarnation of NetLogo with embedded tools for Designing Interactive Scaffolds. *Presented at ISLS Annual Meeting 2021.*

Chen, J., & Wilensky, U. (2020). NetLogo Mobile: An Agent-Based Modeling Platform and Community for Learners, Teachers, and Researchers. *Proceedings of International Conference of the Learning Sciences 2020.*

Professional Experience

Graduate Assistant, Northwestern University Sep 2020 - present

– Worked as a research assistant for NSF Award #1842375: Building Theories of Scientific Phenomena: Comparing and Integrating Aggregate Pattern-based and Agent-based Computational Approaches (PI: Uri J. Wilensky, Bruce Sherin, and Hillary Swanson)

– Worked as a teaching assistant for Computer Science and Learning Sciences classes at Northwestern University (CS372/472: Multi-agent Modeling; and LS426/CS496: Design of Technological Tools for Thinking and Learning)

Co-founder, Turtle Sim LLC Aug 2020 - present

– Co-founded with Professor Uri J. Wilensky for running the two popular learning software, Physics Lab AR (6,550,215 Worldwide Users) and Turtle Universe (105,932 Worldwide Users).

Founder, CIVITAS LLC Aug 2014 - Sep 2019

– Founded the CIVITAS LLC, an award-winning and solution provider in educational technology, Augmented Reality (AR), and Virtual Reality (VR). Designed and implemented projects for Dental Medicine, Criminology, and Physics for several Asian universities.

Projects

Cultivating Modeling Literacy and Practice through a NetLogo OSE (2023-) NSF

The project, funded by NSF's Pathways to Enable Open-Source Ecosystems (POSE) ($1,449,990), seeks to harness the power of open-source development for the creation of new technology solutions to problems of national and societal importance. I co-wrote the funding proposal with PIs (Uri Wilensky & Michael Horn) and have been working on the project to develop NetLogo's open-source ecosystem by engaging global stakeholders and cultivating NetLogo's official online forum.

Enhancing Infrastructure for Model-Based Inquiry in Learning (2022-2024) Northwestern

The project, funded by Northwestern University School of Education and Social Policy (SESP)'s Venture Research Fund ($49,600), aims to enhance NetLogo Web and the ecology building on it significantly. The purpose is to accommodate NetLogo Web for a wider range of features and contexts. I co-wrote the funding proposal with PI (Uri Wilensky) and led its developer and designer team. My responsibilities include recruiting and managing the team, leading the design and development efforts, and supervising many undergraduate and master developers and designers.

Turtle Universe (NetLogo Mobile, 2019-) Link to Product

Project lead, the main developer, and designer of Turtle Universe (Formerly NetLogo Mobile), the ubiquitous, mobile-first incarnation of NetLogo that aims to engage online, out-of-school learners with Agent-based Modeling and Programming (ABM & P). The software builds on NetLogo and extends access to smartphones and tablets. It brings exciting opportunities to reach a more inclusive audience and integrate the latest technological advances, such as Augmented Reality, Physics Computing, and more. With 105,932 users from 173 countries and territories (as of Mar 2024), the online community of Turtle Universe has been thriving.

Physics Lab AR (2017-) Link to Product

Project lead, the main developer, and designer of Physics Lab AR, mobile learning software that makes it easy for students to construct interactive physics simulations and share their work with the app's online community. The design of Physics Lab combines the constructionist tradition (Papert & Harel, 1991) with modern social media features. With 6,550,215 users from 215 countries and territories (mostly online, out-of-school learners, as of Feb 2024) and more than 138,000 artifacts shared by learners, Physics Lab's Online Community (PLOC) is popular and vibrant.

CIVITAS (2013-2017)

Project lead, main developer, and designer of CIVITAS, a massive online social simulation that was popular among youth and young adults in China and around the world.

Professional Activities

National Science Foundation (2023, 2024)	Panelist
National Science Foundation, I-Corps Training (2024)	Participant
ACM Interaction Design and Children (2023)	Virtual Conference Co-chair
ACM Interaction Design and Children (2022-2024)	Reviewer
ISLS Annual Meeting (2021-2023)	Program Committee Member
ACM Computer-Supported Collaborative Work (2022)	Reviewer (With 1 Recognition)
ACM Conference on Human Factor in Computing Systems (2022-2024)	Reviewer (With 1 Recognition)
AERA Annual Meeting (2021-2023)	Reviewer
Constructionism Conference (2023)	Program Committee Member
Association for Computing Machinery (2023-)	Membership
ACM SIGCHI (2024-)	Membership
American Educational Research Association (2021-)	Membership
International Society of Learning Sciences (2021-)	Membership

Supervised Students and Interns

Charles Cheng	Undergrad @ Northwestern University - Curricular Designer
Siqi Chen	Master Student @ Northwestern University - Designer
Sixuan Li	Master Student @ University of Washington - Designer
Shimei Qiu	Master Student @ Northwestern University - Designer
Zixuan Gu	Master Student @ Northwestern University - Designer
Chelsea Guzman	Undergrad @ Northwestern University - Translator
Cassandra Lagunas	Undergrad @ Northwestern University - Translator
Feiwen Xiao	Master Student @ University of Pennsylvania - Research Assistant
Hanwen Zhang	Undergrad @ Middlebury College - Research Assistant
David Du	Master Student @ Northwestern University - Designer
Sherry Xu	Master Student @ Northwestern University - Designer
Seungyeon Kim	Master Student @ Northwestern University - Designer
Ruth Bagley	Master Student @ Northwestern University - Developer & Research Assistant
Haylie Wu	Undergrad @ Northwestern University - Developer
Acero Liang Li	Undergrad @ SUNY Buffalo - Developer
Ethan Ji	Undergrad @ University of Wisconsin Madison - Developer
Eugenia Cao	Undergrad @ Northwestern University - Research Assistant
Andre Chen	Undergrad @ Northwestern University - Developer

Skills

Programming Languages	C++, C#, CSS, HTML, Java, Javascript, NetLogo, Objective-C, Python, Ruby, Typescript, VB.net, Shell Script, Swift, SQL
Other Technical	Full-Stack Development, Product Management, Online Community Design, Data Visualization, UI/UX, AR/VR (Headsets/Handhelds), LLM-driven Systems
Quantitative Toolkits	STATA, R, Tableau
Quantitative Methodologies	Clustering, Regression Analysis, Survival Analysis, Time Series Analysis
Qualitative Methodologies	Clinical Interview, (Online) Ethnography, Quantitative Ethnography, Grounded Analysis, Thematic Analysis, Video Analysis