# JOEY HUANG

Curriculum Vitae, November 2023

North Carolina State University

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## EDUCATION

**Ph.D.** in Learning and Developmental Sciences, minor in Inquiry Methodology
School of Education, Indiana University Bloomington

Thesis title: Studying Computational thinking Through Collaborative Design Activities with Scratch for Middle School Students

**M.A.** in Educational Psychology, The College of Education, The University of Texas at Austin

Thesis title: Facebook Use in College Students: Facing the Learning Motivation of Young Adults

## CURRENT POSITION

**Assistant Professor,** North Carolina State University                    2023 – present
Learning, Design, & Technology
Department of Teacher Education & Learning Sciences, College of Education

## RESEARCH EXPERIENCE

**Postdoctoral Researcher,** "ReCrafting Computer Science: Concretizing Computational Thinking Through Tangible Fiber Crafts." National Science Foundation.                    2022 – 2023

Principal Investigator: Kylie Peppler, University of California, Irvine; Carolyn Rosé, Melisa Martinez, Carnegie Mellon University.

*Responsibilities/Results:* Received an NSF $250k Postdoctoral Supplement Award. Led an interdisciplinary research team to design an open-source robotic loom kit (Robo-Loom). Developed a new and scalable curriculum for undergraduate computer science (CS) that reflects the interdisciplinarity of computational thinking to broaden CS participation for women and people of color in CS, robotics, and art history.

**Assistant Specialist,** "Future of Work at the Human-Technology Frontier: Advancing Cognitive and Physical Capabilities." National Science Foundation.                    2019 – 2022

Principal Investigator: Karthik Ramani, Purdue University; Kylie Peppler, University of California, Irvine; Daron Acemoglu, Massachusetts Institute of Technology.

*Responsibilities/Results:* Co-designed and developed Augmented Reality (AR) platform for pre-skilling and scaling the future manufacturing workforces. Led a research team to conduct data collection and analysis. Managed a research team to conduct end-user studies and prototype development.

**Postdoctoral Researcher,** "Skill-LeARn: Platform to Create and Share AR Content for Skilling." National Science Foundation.                    2020 – 2021

Principal Investigator: Karthik Ramani, Purdue University; Kylie Peppler, University of California, Irvine.

*Responsibilities/Results:* Co-authored a research grant proposal and receive $5 million funding from NSF. Co-developed a physical-reality simulation platform and related technologies to connect human agents with robots and machines. Collaborated with stakeholders in industry and education to design AR content for up-skilling and re-skilling purposes. Co-developed a physical-reality simulation platform and related technologies to connect human agents with robots and machines. Collaborated with stakeholders in industry and academia to develop a research agenda.

**Assistant Specialist,** "Convergence Accelerator Phase I (RAISE): Skill-LeARn: Affordable Augmented Reality Platform for Scaling Up Manufacturing Workforce, Skilling, and Education." National Science Foundation.                                                                                 2019 – 2021

Principal Investigator: Karthik Ramani, Purdue University; Kylie Peppler, University of California, Irvine.

*Responsibilities/Results:* Led research teams to conduct useability testing with education and industry partners. Collected and analyzed over 100+ interviews to understand the behaviors, interest, and goals for the novices and experts of VR/AR applications. Co-developed a VR training system and digital crafting curriculum by applying design-based research methods.

**Lead Graduate Researcher,** "Learning-Objective Based Design and Assessment for the Online Manufacturing Certificate Program."                                                                            2018 – 2020

Collaboration with Boeing Company, Michael Richey; Katy Börner, Indiana University Bloomington; Kylie Peppler, University of California, Irvine; John Hart, Massachusetts Institute of Technology

*Responsibilities/Results:* Researched engineers' online learning trajectories and behaviors on edX. Examined course learning objectives and assessments. Directed and conducted data collection and qualitative and quantitative analysis. Collaborated with scholars and educators at the Boeing Company, MIT, and Indiana University. Applied data visualization techniques to advance learning, engagement, and performance.

**Graduate Assistant,** Center of Excellence for Women and Technology (CEW&T), Indiana University Bloomington.                                                                                             2018 – 2019

*Responsibilities/Results:* Conducted research projects to understand and promote women's participation in STEM learning and education. Assisted the Executive Director of CEW&T on grant applications, event planning, and evaluation report. Wrote and received a research grant to conduct a campus-wide survey and interview for women in STEM fields. Co-developed text- and data-mining techniques to conduct literature review on the topics of women's engagement in STEM fields.

**Graduate Research Assistant,** "ITEST-Strategies: Human-Centered Robotics Experiences for Exploring Engineering, Computer Science, and Society." National Science Foundation.        2015 – 2017

Principal Investigator: Selma Šabanović, Cindy Hmelo-Silver, Indiana University Bloomington.

*Responsibilities/Results:* Co-developed telepresence robot and programmed its function with a research team in Informatics. Conducted qualitative and quantitative data collection and analysis. Coached students to code and manipulate the robots collaboratively. Organized professional workshops for K-12 school teachers to incorporate robotics into curriculum.

**Lead Graduate Researcher,** "DIP: Sustaining ecological communities through citizen science and online collaboration." National Science Foundation.                    2014 – 2017

Principal Investigator: Cindy Hmelo-Silver Indiana University; Rebecca Jordan and Steven Gray, Michigan State University; Gregory Newman, Colorado State University.

*Responsibilities/Results*: Analyzed qualitative data to examine collaborative learning for citizen scientists. Developed analytical and computational tool with R program to visualize video data analysis. Led conference proceedings (ICLS, CSCL) and publication (CHB).

**Graduate Research Assistant,** "Systems and Cycles: Using Structure-Behavior-Function Thinking as a Conceptual Tool for Understanding Complex Natural Systems in Middle School Science." Institute for Education Sciences.                    2015 – 2016

Principal Investigator: Cindy Hmelo-Silver, Indiana University; Rebecca Jordan, Michigan State University.

*Responsibilities/Results*: Created systematic workflow for the designed program with NetLogo. Updated ecosystem programs with NetLogo. Coached graduate students to employ the designed program for data analysis.

**Graduate Research Assistant,** "Mobile Games to Foster Financial Literacy." Kelley School of business, Indiana University Bloomington.                    2014 – 2016

Principal investigator: Noah Stoffman and Scott Yonker, Kelley School of Business, Indiana University Bloomington.

*Responsibilities/Results*: Co-designed a tablet game for financial literacy. Conducted interviews and observations for prototypes and playtesting. Researched and presented game design and financial literacy for undergraduate students in education and business.

**Graduate Research Assistant,** "Playful Learning in the Wild: Understanding Game Making as Interest-Driven Learning." Research Proposal Incentive Fund, Indiana University School of Education.                    2014 – 2015

Principal investigator: Sean Duncan, Indiana University Bloomington.

*Responsibilities/Results*: Co-designed educational games for STEM learning. Designed prototypes with 3D printers and laser cutter. Conducted playtesting and interviews for improvement of the games.

**Graduate Research Assistant,** "Investigating Story Games: Structured Educational Role-Play with Teens and Pre-Service Teachers." Proffitt Internal Research Grant.                    2014 – 2015

Principal investigator: Sean Duncan, Indiana University Bloomington.

*Responsibilities/Results*: Performed data collection and analysis for both qualitative and quantitative approaches. Co-developed a research agenda and project direction.

**Lead Graduate Researcher,** "Connecting Badges and Expertise in Interest-Driven Affinity Spaces." HASTAC Digital Media and Learning Research Competition Grant.                    2014 – 2015

Principal investigator: Sean Duncan, Indiana University Bloomington.

*Responsibilities/Results*: Led a research team and managed undergraduate and graduate students. Performed literature review, data collection and data analysis. Co-designed a computational and analytical program for data analysis with Python.

**Research Assistant**, collaborated with Diane Schallert, Department of Educational Psychology,     2011 – 2012
The University of Texas at Austin.

*Responsibilities/Results*: Developed online survey with Qualtrics to examine the college
students' motivation, identity, and culture with the use of social networking sites.

## GRANTS
(I have led or significantly contributed to writing and developing the following funded grants)

**Supplemental Funding for Postdoctoral Researchers to Mitigate COVID-19 Impacts on Research Career Progression**

National Science Foundation, Postdoctoral Supplement Award ($250k)     2022

**Recrafting Computer Science: Concretizing Computational Thinking Through Tangible Fiber Crafts**

National Science Foundation, ECR-HER Award #2100401 ($1.5 million)
Principal investigator: Kylie Peppler, University of California, Irvine; Carolyn Rose, Melisa Martinez     2021

**Future Jobs and AI: Skill-XR: An Affordable and Scalable X-Reality (XR) Platform for Skills Training and Analytics in Manufacturing Workforce Education**

National Science Foundation Convergence Accelerator Phase II Award #2033615 ($5 million)
Principal investigator: Karthik Ramani, Purdue University; Kylie Peppler, University of California, Irvine     2020

**The Impact of Interests, Confidence, Motivation, and Experience: Engaging and Learning New Technologies for Undergraduate Women**

The Office of the Vice Provost for Research (OVPR) Award, IUB ($5,000)
Principal investigator: **Joey Huang**, Maureen Biggers     2018

## HONORS & AWARDS

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| ACM CHI 2023 Honorable Mention Award (top 5% of accepted papers) | 2023 |
| Early Career Workshop International Conference on Computers in Education | 2019 |
| Provost's Travel Award for Women in Science, IUB, $1,750 | 2018 – 2019 |
| Trentham Travel Fund, IUB, $800 | 2018 – 2019 |
| Center for Research on Learning and Technology Travel Award, IUB, $3,300 | 2014 – 2019 |
|     IUB, $5000 | 2018 |
| Frieda Alice Renfro Fellowship, IUB, $900 | 2018 |
| Best Student Paper Award, American Educational Research Association (AERA) Annual Meeting Media, Culture and Learning (MCL) SIG, $300 | 2016 |
| Government Scholarship to Study Abroad (GSSA), Taiwan, $32,000 (2 in 10 selected nationally) | 2014 |
| Proffitt Fellowship, Indiana University Bloomington, $42,000 | 2013 |
| Champion in Teaching Materials Design, National Changhua University of Education, Taiwan | 2008 |

## PUBLICATIONS & RELATED ARTICLES

### Journal Articles

**Huang, J.**, Han, A., Villanueva, A., Liu, Z., Zhu, Z., Ramani, K., Peppler, K. (under review). Deepening Children's STEM learning through making and creative writing. *International Journal of Child-Computer Interaction*.

Glenn, T., Raja, P. F., Payne, K. T., Perdomo, O. M., Pereira, N., **Huang, J.**, Peppler, K., Ramani, K. (under review). MicrokARts: Designing augmented reality enabled karts for co-located play with children. *Journal of Child-Computing Interaction*.

Jiang, S., **Huang, J.**, Lee, H. S. (2023). Visualizing qualitative data: Unpacking the complexities and nuances of technology-supported learning processes. *Educational Technology Research and Development, 1-19.*

**Huang, J.,** Parker, M. (2022). Developing computational thinking collaboratively: The nexus of computational practices within small groups. *Journal of Computer Science Education.* https://doi.org/10.1080/08993408.2022.2039488

Peppler, K., **Huang, J.**, Richey, C. M., Ginda, M., Börner, K., Quinlan, H., Hart, A. J. (2020). Key principles for workforce upskilling via online learning: A learning analytics study of a professional course in additive manufacturing. *arXiv preprint.* https://arxiv.org/abs/2008.06610

**Huang, J.**, Hmelo-Silver, C. E., Jordan, R., Gray, S., Frensley, T., Newman, G., & Stern, M. J. (2018). Scientific discourse of citizen scientists: Models as a boundary object for collaborative problem solving. *Computers in Human Behavior, 87*, 480-492. https://doi.org/10.1016/j.chb.2018.04.004

Gray, S., Jordan, R., Crall, A., Newman, G., Hmelo-Silver, C., **Huang, J.,** Whitney, N., Mellor, D., Frensley, T., Prysby, M. & Singer, A. (2017). Combining participatory modelling and citizen science to support volunteer conservation action. *Biological Conservation, 208*, 76-86. https://doi.org/10.1016/j.biocon.2016.07.037

Frensley, T., Crall, A., Stern, M., Jordan, R., Gray, S., Prysby, M., ... & **Huang, J.** (2017). Bridging the Benefits of Online and Community Supported Citizen Science: A Case Study on Motivation and Retention with Conservation-Oriented Volunteers. *Citizen Science: Theory and Practice, 2*(1), 4. http://doi.org/10.5334/cstp.84

**Refereed Conference Proceedings**

**Huang, J.**, Cawelti, L., Peppler, K. (2023). Exploring algorithm building through designing and making kinetic sculpture. In P. Blikstein, J. V. Aalst, R. Kizito, & K. Brennan (Eds.) *17th International Conference of the Learning Sciences (ICLS)* (pp. 1494-1497). Montreal, Canada: International Society of the Learning Sciences.

Speer, S., **Huang, J.,** Yankova, N., Rose, C., Peppler, K., Orta-Martinez, M. (2023). RoboLoom: Collaboratively re-crafting CS education. In J. D. Slotta & E., Charles (Eds.) *3rd Annual Meeting of the International Society of the Learning Sciences (ISLS) Annual Meeting 2023* (pp. 31-34). Montreal, Canada: International Society of the Learning Sciences.

Peppler, K., **Huang, J.** (2023). Visual Learning Analytics to Upskill Aerospace Engineers in Advanced Manufacturing. In P. Blikstein, J. V. Aalst, R. Kizito, K. Brennan (Eds.) *17th International Conference of the Learning Sciences (ICLS)* (pp. 1900-1902). Montreal, Canada: International Society of the Learning Sciences.

Ojeda-Ramirez, S., Cawelti, L., **Huang, J.,** Peppler, K. (2023). Tools dictate the divide: entrenched gendered practices in the making of kinetic sculptures. In P. Blikstein, J. V. Aalst, R. Kizito, & K. Brennan (Eds.) *17th International Conference of the Learning Sciences (ICLS)* (pp. 1964-1966). Montreal, Canada: International Society of the Learning Sciences.

Vitiello, R., **Huang, J.**, Speer, S., Yankova, N., Peppler, K., Orta-Martinez, M., Rose, C. (2023). Studying interdisciplinary collaboration as a core skill. In C. Damşa, M. Borge, E. Koh, & M. Worsley (Eds.) *16th International Conference on Computer-Supported Collaborative Learning (CSCL)* (pp. 378-379). Montreal, Canada: International Society of the Learning Sciences.

Yankova, N., **Huang, J.,** Vitiello, R., Speer, S., Orta-Martinez, M., Rose, C., Peppler, K. (2023). "Where is the Z-axis?": Negotiating understanding of servo rotation through gestures and tools. In P. Blikstein, J. V. Aalst, R. Kizito, & K. Brennan (Eds.) *17th International Conference of the Learning Sciences (ICLS)* (pp. 1254-1257). Montreal, Canada: International Society of the Learning Sciences.

Zhu, Z., Liu, Z., Zhang Y., Zhu, L., **Huang, J.**, Villanueva, A., Qian, X., Peppler, K., Ramani, K. (2023). LearnIoTVR: An end-to-end virtual reality environment providing authentic learning experiences for Internet of Things. *The ACM CHI Conference on Human Factors in Computing Systems 2023.* *Honorable Mention Award

**Huang, J.**, Han, A., Sedas, M., Telfer-Radzat, K.,& Peppler, K., (2022). Crafting paper circuits: Gendered materials for circuitry learning. In J. Oshima, T. Mochizuki, & Y. Hayashi (Eds.) *International Collaboration toward Educational Innovation for All: International Society of the Learning Sciences (ISLS) Annual Meeting 2022* (pp.1293-1296). Hiroshima, Japan: International Society of the Learning Sciences.

**Huang, J.** (2022). Exploring social interactions to promote computational thinking practices. In J. Oshima, T. Mochizuki, & Y. Hayashi (Eds.) *International Collaboration toward Educational Innovation for All: International Society of the Learning Sciences (ISLS) Annual Meeting 2022* (pp. 607-608). Hiroshima, Japan: International Society of the Learning Sciences.

Han, A., Keune, A., **Huang, J**., & Peppler, K., (2022). Visualizing Family Engagement in Museum Settings. In: J. Oshima, T. Mochizuki, & Y. Hayashi (Eds.) *International Collaboration toward Educational Innovation for All: International Society of the Learning Sciences (ISLS) Annual Meeting 2022* (pp. 1094-1095). Hiroshima, Japan: International Society of the Learning Sciences.

Ipsita, A., Erickson, L., Dong, Y., **Huang, J**., Bushinski, A. K., Saradhi, S., Vilanueva, M. A., Peppler, K., Redick, S. T., Ramani, K. (2022). Towards modeling of virtual reality welding simulators to promote accessible and scalable training. *The ACM CHI Conference on Human Factors in Computing Systems 2022.* https://doi.org/10.1145/3491102.3517696

Villanueva, A., Liu, Z., Zhu, Z., Du, X., **Huang, J**., Peppler, K., Ramani, K. (2021). RobotAR: An augmented reality compatible teleconsulting robotics toolkit for augmented makerspaces experiences. *The ACM CHI Conference on Human Factors in Computing Systems 2021.* https://doi.org/10.1145/3411764.3445726

**Huang, J.** (2020). Exploring computational thinking practices through collaborative design activities. In C. Girvan, J. R. Byrne, B. Tangney, & V. Dagiené (Eds.), *Exploring, Testing and Extending our Understanding of Constructionism: Constructionism 2020* (pp. 95-96). Dublin, Ireland: ACM (conference cancelled, proceedings published).

Lee, U.-S., Stamatis, M. K., Pacheco, J., Roque, R., Widman, S., Wingert, K., Wegemer, M. C**., Huang, J.** (2020). Partnering for equity: Research practice partnerships and community contexts. In M. Gresalfi & I. Horn (Eds.), *The interdisciplinarity of the learning sciences: International conference of the learning sciences (ICLS) 2020* (pp. 2631-2632). Nashville, TN, USA. https://repository.isls.org//handle/1/6643

**Huang, J.** & Peppler, K. (2019). Studying computational thinking through collaborative design activities with Scratch. In K. Lund, E. Lavoué, G. P. Niccolai (Eds.), *A wide lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings: International Conference on Computer Supported Collaborative Learning (CSCL) 2019* (pp. 933-935). Lyon, France. https://doi.dx.org/10.22318/cscl2019.933

**Huang**, J., Gomoll, A., Tolar, E., Hmelo-Silver, C. E., Sabanovic, S. (2018) Visualizing complex classrooms through real-time observations. In Kay, J. and Luckin, R. (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, 13th International Conference of the Learning Sciences (ICLS) 2018* (pp.1609-1610). London, UK. https://repository.isls.org//handle/1/761

**Huang, J.,** Hmelo-Silver, C., Jordan, R., Frensley, T., Gray, S., & Newman, G. (2017). Scientific discourse of citizen scientists: A collaborative modeling as a boundary object. In Smith, B. K., Borge, M., Mercier, E., and Lim, K. Y. (Eds.), *Making a Difference: Prioritizing Equity and Access in CSCL, 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017* (pp. 399-406). Philadelphia, PA, USA. https://repository.isls.org/handle/1/257

Duncan, S., Georgen, C., Cook, L. & **Huang, J.** (2016). "I have to tell you something": How narrative and pretend play intersect in story games. In K. Caldwell, S. Seyler, A. Ochsner, & C. Steinkuehler (Eds)., Proceedings of *Games+Learning+Society 11*, 67-74. https://gls2015.sched.com/event/3Djo/narrative

**Huang, J.** & Duncan, S. C. (2016). Educational roles and structures of interaction in a Minecraft affinity space. In K. Caldwell, S. Seyler, A. Ochsner, & C. Steinkuehler (Eds)., *Proceedings of Games+Learning+Society 11*, 525- 526.

Duncan, S. C. & **Huang, J.** (2016). Connecting badges: Exploring the utility of digital badges for learning in affinity spaces. In *Selected Papers of Internet Research.* https://journals.uic.edu/ojs/index.php/spir/article/view/8506/6776

Duncan, S. C., **Huang, J.**, Georgen, C. & Cook, L. (2015). Investigating recognition systems in a collaborative, programming-oriented affinity space. In O. Lindwall, P. Hakkinen, T. Koschmann, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Materials Conditions of Learning: Computer Supported Collaborative Learning (CSCL) Conference 2015* (Vol 2., pp.753-754). Gothenburg, Sweden. https://www.isls.org/cscl2015/papers/CSCL2015ProceedingsVolume2.pdf

Hmelo-Silver, C. E., Jordan, R. C., Novak, W.E. **Huang, C.J.**, Mellor, D., Gray, S., Crall, A., & Newman, G. (2015). Engaging citizen scientists in model-based reasoning. In O. Lindwall, P. Hakkinen, T. Koschmann, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Materials Conditions of Learning: Computer Supported Collaborative Learning (CSCL) Conference 2015* (pp. 693-694). Gothenburg, Sweden. https://www.isls.org/cscl2015/papers/MC-0198-Poster-HmeloSilver.pdf

Duncan, S.C., **Huang, C.J.** (2014). "About as educational as Minecraft can get": Youth framings of games and learning in an affinity space. In A. Ochsner, J. Dietmeier, C. Williams, & C. Steinkuehler (Eds). *Proceedings of GLS 10 (Games+Learning+Society) Conference*, 82-88. https://gls2014.sched.com/event/1kctH7T/affinity-spaces

**Technical Reports and Others**

Borner, K., Heimlich, J., Kennedy, B., Peppler, K., Uzzo, S. **Huang, J.** (2022). *Data Visualization Literacy: Research and Tools that Advance Public Understanding of Scientific Data.* Project deliverable for National Science Foundation project #1713567.

Peppler, K., **Huang, J.** (2022). *CAREER: Designing a New Nexus: Examining the Social Construction of Electronics and Computing Toolkits to Broaden Participation and Deepen Learning.* Project deliverable for National Science Foundation project # 1936098.

Peppler, K., Rose, C., Martinez, M., **Huang, J.** (2022). *ReCrafting Computer Science: Concretizing Computational Thinking Through Tangible Fiber Crafts.* Project deliverable for National Science Foundation project #2100401.

Keune, A., Bermúdez, D., Dahn, M., **Huang, J.**, Peppler, K. (2022). Performing Mathematics Through Crafting: A workshop from a Constructionist Approach. Connected Learning Alliance. Blog Post [Link here].

Ramani, K., Elmqvist N., Peppler, K., **Huang, J.**, Quinn, A., Redick, T. (2021). *B1 (Future Jobs and AI): Skill-XR: An affordable and scalable X-Reality (XR)* platform for skills training and analytics in manufacturing workforce education. Project deliverable for National Science Foundation project #2033615.

Peppler, K., **Huang, J.** (2021). *Future of Work at the Human-Technology Frontier (FW-HTF): Pre-skilling workers, understanding labor force implications and designing future factory human-robot workflows using a physical simulation platform.* Project deliverable for National Science Foundation project #1931227.

Peppler, K., **Huang, J.** (2020). *Future of Work at the Human-Technology Frontier (FW-HTF): Pre-skilling workers, understanding labor Force implications and designing future factory human-robot workflows using a physical simulation platform.* Project deliverable for National Science Foundation project #1931227.

Ramani, K., Redick, T., Ebert, D., Peppler, K., **Huang, J.** (2020). *Convergence Accelerator (C-Accel) Phase I (RAISE): Skill-LeARn: Affordable and accessible augmented reality platform for scaling up manufacturing workforce, skilling, and education.* Project deliverable for National Science Foundation project #1936098.

Jordan, R., Hmelo-Silver, C., Stern, M., Gray, S., Newman, G., Crall, A., **Huang, J.** (2017). *DIP: Sustaining ecological communities through citizen science and online collaboration.* Project deliverable for National Science Foundation project #1227550.

## INVITED TALKS, PRESENTATIONS, & WORKSHOPS

**Guest Speaker** on the topic of Designing and Developing a Mixed Reality (XR) Platform for Learning and Workforce Training for Digital Learning Lab directed by Mark Warschauer, University of California, Irvine, School of Education. January, 2021.

**Guest Speaker** on the topic of Ed Tech: Measuring Computational thinking Practices for *21st Century Literacies* course by Dr. Fernando Rodriguez, University of California, Irvine, School of Education. February, 2020.

**Guest Lecture** for Data Visualization in Education graduate-level course by Dr. Shiyan Jiang, North Carolina State University, Program of Learning Design and Technology. November, 2019.

**Guest Lecture** for Introduction to Informatics (honors course), Indiana University Bloomington, School of Informatics. October, 2018.

**Guest Speaker** on the topic of 3D Printing and Design for Graduate Women in Technology (GWiT), Indiana University Bloomington. (October, 2017)

**Guest Lecture** for Management Information Systems undergraduate-level course by Dr. Taryn Malher & Dr. Frank Akaiwa, Indiana University Bloomington, School of Business. Spring & Fall 2017-2018; Spring 2019.

## CONFERENCE PRESENTATIONS, TALKS, POSTER, SYMPOSIA

Han, A., **Huang, J.**, Villanueva, A., Peppler, K., Liu, Z., Zhu, Z., Ramani, K. (April 13-16, 2023). IoT Props Into Creative Writing: Designing Narrative-Based Maker Activities for Children [Poster Session]. Annual Meeting of the American Educational Research Association (AERA), Chicago, IN, United States.

Ojeda Ramirez, S., Cawelti, L., **Huang, J.**, Telfer-Radzat, K., & Peppler, K. (April 13-16, 2023). "I know a lot more boys that are interested in doing stuff like that": Gendered Perceptions of Computational Construction Kits [Conference Roundtable Session] Annual Meeting of the American Educational Research Association (AERA), Chicago, IN, United States.

Cawelti, L., **Huang, J.**, Ojeda Ramirez, S., Telfer-Radzat, K., & Peppler, K. (April 13-16, 2023). Exploring Interdisciplinary STEAM Practices through Making a Kinetic Sculpture [Conference Paper Session]. Annual Meeting of the American Educational Research Association (AERA), Chicago, IN, United States.

**Huang, J.**, Schindler, E., Peppler, K. (July, 2022). Artificial Intelligence Technologies and Connected Learning. Paper presented at the Connected Learning Summit (CLS), July 27-29, Online Conference.

Keune, A., Bermúdez, D. V., Dahn, M., **Huang, J.**, Peppler, K. (July, 2022). Creating a Doll Skirt or a Basket: Performing Proportional Reasoning and Spatial Visualization. Workshop presented at the Connected Learning Summit (CLS), July 27-29, Online Conference.

**Huang, J.** (July, 2021). Understanding Collaborative Computational Thinking. Paper presented at the Connected Learning Summit (CLS), July 7-30, 2021, Online Conference.

Phonethibsavads, A., **Huang, J.** (October, 2019). A Comparison of Goal-Directed Interactions in Improv Performance and Collaborative Problem-Solving. Poster presented at the Connected Learning Summit (CLS), Irvine, CA, U.S.A.

**Huang, J.** (October, 2019). Studying Computational Thinking through Collaborative Design Activities. Paper presented at the Learning Sciences Graduate Student Conference (LSGSA), Evanston, IL, U.S.A.

**Huang, J.** (April, 2019). Studying Collaborative Practices to Enhance Equity in Computer Science Literacy and Education. In Panel: Designing for Design: Creating Learning Environments that Support Equitable Engineering for Students in Grades 3-8. Presented at the Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada.

**Huang, J.**, Hung, J.-H. R., Priscilla, C. (March, 2019). Women in Technology: Utilizing a Text-Mining Technique to Conduct a Literature Review. Paper presented at the Center of Excellence for Women in Technology Summit conference, Bloomington, IN, U.S.A.

**Huang, J.**, Upadhyay, S. (March, 2019). Studying Computational Thinking Through Collaborative Design Activities with Scratch. Paper presented at the Instructional Systems Technology Conference, Bloomington, IN, U.S.A.

**Huang, J.**, Weber, M., Zhang, C. (March, 2019). Introduction of 3D Printing and Design. Workshop presented at the Center of Excellence for Women in Technology Summit conference, Bloomington, IN, U.S.A

**Huang, J.** (October, 2018). Exploring Computational Thinking Practices of Expert and Novice Users through Analyses of Computer-Mediated Discourse in the Scratch Online Community. Paper presented at the Learning Sciences Graduate Student Conference (LSGSA), Bloomington, IN, U.S.A.

**Huang, J.** (April, 2018). Exploring Computer-Mediated Discourse in the Scratch Online Community. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New York, NY, U.S.A.

**Huang, J.** (March, 2018). Collaborative Programming: Designing to Support Collaboration in Scratch. Paper presented at the InfoSocial Conference at Northwestern University, Evanston, IL, U.S.

**Huang, J.**, Liu, X. (March, 2018). 3D Printing for Everyone. Workshop presented at the Center of Excellence for Women in Technology Summit, Bloomington, IN, U.S.A.

Frensley, T., Gray, S., **Huang, J.**, Jordan., R. (May, 2017). Designing Collaborative Science Projects and Tools for Conservation. Symposium in Citizen Science Association (CSA) CitSci Conference, St. Paul, MI, U.S.A.

**Huang, J.**, Hmelo-Silver, C. E., Jordan, R., Frensley, T., Gray, S., Newman, G. (April, 2017). Exploring Citizen Science Engagement in Collaborative Scientific Practices. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), San Antonio, TX, U.S.A.

**Huang, J.** & Duncan, S. C. (April, 2016). Anonymous Spaces and Non-Anonymous Participation: Understanding Role and Structure Within an Affinity Space. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), Washington, DC., U.S.A.

**Huang, J.** (June, 2016). Computational Thinking in Practice: Understanding How Scratch is Perceived and Used in Taiwan and the United States. Workshop presented at the International Society of the Learning Sciences (ICLS), Singapore.

Duncan, S. C. & **Huang, J.** (October, 2015). Connecting badges: Exploring the utility of digital badges for learning in affinity spaces. Presented at Internet Research 16, Phoenix, Arizona.

Duncan, S. C., **Huang, J.**, Georgen, C. & Cook, L. (June, 2015). Investigating recognition systems in a collaborative, programming-oriented affinity space. Poster presented at Computer Supported Collaborative Learning, Göteborg, Sweden.

Hmelo-Silver, C. E., Jordan, R. C., Novak, W.E. **Huang, C.J.**, Mellor, D., Gray, S., Crall, A., Newman, G. (June, 2015). Engaging Citizen Scientists in Model-based Reasoning. Poster presented at Computer Supported Collaborative Learning, Göteborg, Sweden.

Hmelo-Silver, C. E., Jordan, R. C., Novak, W.E. **Huang, C.J.**, Mellor, D., Gray, S., Crall, A., Newman, G. (February, 2015). Engaging Citizen Scientists in Model-based Reasoning. Paper presented at Citizen Science Association Conference, San Jose, CA, U.S.A.

Duncan, S. C., **Huang, J.**, Georgen, C., Cook, L. (October, 2014). Connecting badges and interactional practices in online affinity spaces. Invited poster session, Indiana University School of Education "First Fridays" poster session for Center for Research on Learning & Technology, Bloomington, IN, U.S.A.

Duncan, S. C., **Huang, J.,** & Georgen, C. (March, 2014). Connecting badges and online expertise. Presented at Digital Media & Learning 2014, Boston, MA, U.S.A.

## TEACHING EXPERIENCE

### Instructorship

**Associate Instructor,** P251: Educational Psychology of Elementary School Majors (Online), Department of Counseling and Educational Psychology, Indiana University Bloomington.     2017 – 2018

Responsibilities: Designed online curriculums, modules, and assessments via Canvas to teach pre-service teachers varied educational psychology and learning theories.

2017 – 2018

**Associate Instructor,** M101: Field Experience for Elementary School Majors (Online), Department of Counseling and Educational Psychology, Indiana University Bloomington.

Responsibilities: Scaffolded students to apply learning theories and educational psychology constructs in teaching.

**Associate Instructor,** P251: Educational Psychology of Elementary School Majors, Department of Counseling and Educational Psychology, Indiana University Bloomington.     2016 – 2017

Responsibilities: Created course materials and designed curriculums to teach pre-service teachers varied educational psychology and learning theories.

**Associate Instructor,** M101: Field Experience for Elementary School Majors, Department of Counseling and Educational Psychology, Indiana University Bloomington.     2016 – 2017

Responsibilities: Coached students to connect learning theories and educational psychology constructs in teaching.

### Assistantship

**Teaching Assistant,** EDUC 218/IN4MATX295: Arts, Making, and Engineering, School of Education, Department of Informatics.     2020

Responsibilities: Designed and structured the course agenda, readings, assignments in relation to the construct of arts, making, and engineering. Developed and Led lab and classroom activities.

**Teaching Assistant,** G202: Business, Government, and Society, Kelley School of Business, Indiana University Bloomington.     2017 – 2018

Responsibilities: Evaluated students' case studies and course assignment based on the social strategy case studies from Harvard Business School (HBS). Improved the course assessment to better evaluate students' learning.

## PROFESSIONAL EXPERIENCE

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| **3D Printing and Design Lead Intern**, Center of Excellence for Women and Technology (CEW&T), Indiana University Bloomington. | 2015 – 2019 |

Responsibilities: Researched, developed, and taught additive manufacturing workshops to faculty, student, and staff at Indiana University and youth in K-12 after-school programs.

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|---|---|
| **Data Analyst**, Inteplast Group, LTD. | 2012 – 2013 |

Responsibilities: Analyzed manufacturing process data and sample testing results to improve manufacturing production. Utilized statistical process control (SPC) (i.e., QI Macros, Minitab) to monitor and advance manufacturing process.

## ACADEMIC & PROFESSIONAL SERVICE

### Professional Service

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|---|---|
| Online conference committee: ISLS Annual Meeting | 2022 |
| Conference committee and representative of ILSSA: International Society of the Learning Sciences (ISLS) Annual Meeting 2021 | 2020 – 2022 |
| Founding Officer (Membership & Outreach): International Learning Sciences Student Association (ILSSA) | 2019 – 2021 |
| Conference session chair: Pedagogy and Literacy in Engineering and Computer Science Contexts, American Educational Research Association (AERA) | 2019 |
| Conference host & committee: Center of Excellence for Women and Technology Summit | 2019 |
| Conference host & committee: Center of Excellence for Women and Technology Summit | 2018 |
| Conference host & committee: Learning Sciences Graduate Student Conference (LSGSC) | 2017 |
| Conference host & committee: Instructional Systems Technology Conference | 2017 |
| Conference session chair: Computer Supported Collaborative Learning (CSCL) | 2017 |
| Vice President & Treasurer: Learning Sciences Graduate Student Association (LSGSA) | 2017 |
| Research Ambassador: Graduate and Professional Student Government (GPSG) | 2016 – 2017 |
| Vice President: Taiwanese Student Association – UT Austin | 2011 – 2012 |

### Institutional Service

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|---|---|
| Journal reviewer: Computer Science Education | 2023 |
| Conference reviewer: International Society of the Learning Sciences (ISLS) | 2023 |
| Conference reviewer: American Educational Research Association | 2023 |
| Conference reviewer: ACM CHI Conference | 2023 |
| Conference reviewer: ACM CHI Conference | 2022 |
| Conference reviewer: American Educational Research Association | 2022 |
| Conference reviewer: Connected Learning Submit | 2022 |
| Conference reviewer: International Society of the Learning Sciences (ISLS) | 2021 |
| Conference reviewer: American Educational Research Association | 2021 |
| Conference reviewer: ACM CHI Conference | 2021 |
| Conference reviewer: Connected Learning Submit | 2020 |
| Conference reviewer: American Educational Research Association | 2019 |
| Conference reviewer: Learning Sciences Graduate Student Conference | 2019 |
| Journal reviewer: Computer Science Education | 2018 |
| Journal reviewer: Computers in Human Behavior | 2018 |
| Conference reviewer: Learning Sciences Graduate Student Conference | 2018 |
| Conference reviewer: American Educational Research Association | 2018 |
| Conference reviewer: The International Conference of the Learning Sciences | 2018 |
| Conference reviewer: The International Conference on Computer-Supported Collaborative Learning | 2017 |

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| Journal reviewer: Computers in Human Behavior | 2017 |
| Conference reviewer: Learning Sciences Graduate Student Conference | 2017 |
| Conference reviewer: American Educational Research Association | 2017 |
| Conference reviewer: | |
| The International Conference of the Learning Sciences | 2016 |
| Conference reviewer: Instructional Systems Technology Conference | 2016 |
| Conference reviewer: American Educational Research Association | 2015 |
| Conference reviewer: Games, Learning, and Society Conference | 2015 |
| Conference reviewer: Games, Learning, and Society Conference | 2014 |

**Public Service**

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|---|---|
| School of Information and Computer Sciences (ICS) Industry Showcase, Irvine, California | 2020 |
| 3D Printing Workshop at Girls Inc. Bloomington, Indiana | 2019 |
| Workshop host: Launch(ed) Women in Tech Conference, Fishers, Indiana | 2019 |
| Workshop co-host: Makerspace workshop, Indianapolis, Indiana | 2018 |
| Workshop co-host: Best Buy + LRNG e-Textiles (LilyPad and ArduBlocks), | |
| St. Jude's Children's Hospital, Memphis, Tennessee | 2018 |

## PROFESSIONAL AFFILIATIONS

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|---|---|
| Member: Association for Computing Machinery (ACM) | 2019 – present |
| Member: Special Interest Group on Computer Science Education (SIGCSE) | 2019 – present |
| Member: American Educational Research Association (AERA) | |
| Learning Sciences Special Interest Group (SIG LS) | 2013 – present |
| Member: International Society of the Learning Sciences (ISLS) | 2013 – present |

## CERTIFICATE

Additive Manufacturing for Innovative Design and Production (MITxPRO)
Teaching Chinese as a Foreign Language, National Taiwan Normal University

## SKILLS

Languages: Mandarin Chinese (native), English (proficient)
Statistical Methods: Multiple regression, Multivariate Analysis, Covariate Analysis, Correlation Analysis
Statistical Package: R/R studio, SPSS, Mplus, SAS
Qualitative Analysis Software: NVivo, ATLAS.ti, InqScribe (transcription), MAXQDA, Dedoose
Qualitative Skills: Interview, Focus Group, Observation, Ethnographic Study
Social Network Analysis & Visualization Tools: Gephi, UCINET, R
Programming: Python, HTML