

Ha Nguyen

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SUMMARY

My research integrates learning sciences, learning analytics, and human-centered design to promote deeper learning in Science, Technology, Engineering, and Math (STEM) contexts for diverse learners. Towards this end, I examine how to design technologies to foster collaboration in student discussion, how to create data visualizations to provide actionable feedback to teachers and improve teaching, and how to provide adaptive, formative feedback for learners' self-directed learning.

EDUCATION

- 2022 University of California-Irvine, PhD, Education.
Dissertation Study: *Designing Conversational Agents to Promote Collaboration and Systems Thinking in High School Science Discussion*
Committee: Dr. June Ahn (co-chair), Dr. Rossella Santagata (co-chair), Dr. Mark Warschauer, Dr. Amy Ogan, Dr. Cascade Sorte.
- 2020 University of California-Irvine, Master's Degree, Education.
- 2018 Duke University, Bachelor's Degree, Public Policy, Japanese, Minor in Education.

GRANTS, HONORS & AWARDS

- 2021 **PI.** Designing a Conversational Agent in Collaborative Discussion for Systems Thinking. Center for Teacher Development and Professional Practice; \$2000.
- 2021 **Recipient,** Michael E. Martinez Prize for Outstanding Educational Research and Service
- 2021 **Best Paper Nominee,** International Conference of Quantitative Ethnography.
- 2020 **Honorable Mention for Best Paper,** Conference on Educational Data Science.
- 2018-2023 **Provost Fellowship,** UC Irvine.
- 2018 **Dean's Recruitment Fellowship,** UC Irvine
- 2018 **Phi Beta Kappa Honors Society**
- 2018 **Highest Distinction in Public Policy** and **Holton Prize for Innovative Work in Education** for senior thesis.
- 2014-2018 **University Scholars,** A full, four-year merit scholarship for students with potential to research interdisciplinary interests.

PEER-REVIEWED PUBLICATIONS

- 2022 Fischer, C., **Nguyen, H.**, Feng, Y., Fiorini, S., Kalender, Y., McKay, T., ..., & Warschauer, M. (in press). Advanced Placement course credit and undergraduate student success in STEM gateway courses. *Journal of Research in Science Teaching*.
- Nguyen, H.** (2022). Examining teenagers' perceptions of conversational agents in learning settings. In *IDC'22: Interaction Design & Children*.
<https://doi.org/10.1145/3501712.3529740>
- Nguyen, H.** (2022). Let's Teach Kibot: Discovering discussion patterns between student groups and two conversational agent designs. *British Journal of Educational Technology*. <http://doi.org/10.1111/bjet.13219>

- Nguyen, H.** (2022). Learners' reactions to chatbot communication breakdowns: Insights into fostering learning. In *2nd Annual Meeting of the International Society of the Learning Sciences (Online)*. International Society of the Learning Sciences.
- Nguyen, H.** & Young, W. (2022). Knowledge construction and uncertainty in real world argumentation: A text analysis approach. In *The 12th International Conference on Learning Analytics and Knowledge (LAK21)*.
<https://dl.acm.org/doi/fullHtml/10.1145/3506860.3506864>
- Jacob, S., Jonathan, M., **Nguyen, H.**, Richardson, D., & Warschauer, M. (2022). Examining the what, why, and how of multilingual student identity development in computer science. *ACM Transactions on Computing Education*.
<https://dl.acm.org/doi/abs/10.1145/3500918>
- Fischer, C., **Nguyen, H.**, Estrella, G., & Collins, P. (2022). Examining benefits of lectures and inquiry-based laboratories for language minority students in science gateway courses. *Plos One*.
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0267188>
- 2021 **Nguyen, H.**, Lim, K.Y., Fischer, C., Wu, L., Washington, G., & Warschauer, M. (2021). Peer support and temporality in regulated learning. *Learning & Instruction*.
<https://doi.org/10.1016/j.learninstruc.2021.101443>
- Nguyen, H.**, & Santagata, R. Impact of computer modeling on learning and teaching systems thinking. (2021). *Journal of Research in Science Teaching*.
<https://onlinelibrary.wiley.com/doi/10.1002/tea.21674>
- Nguyen, H.**, Ahn, J., Belgrave, A., Lee, J., Cawelti, L., Kim, H.E., Prado, Y., Santagata, R., & Villavicencio, A. (2021) Establishing trustworthiness through algorithmic approaches to qualitative research. In *Second International Conference on Quantitative Ethnography*. Springer, Cham. https://doi.org/10.1007/978-3-030-67788-6_4
- Ahn, J., **Nguyen, H.**, Campos, F., & Young, W. (2021). Transforming everyday information into practical analytics with crowdsourced assessment tasks. In *The 11th International Conference on Learning Analytics and Knowledge (LAK21)*.
<https://doi.org/10.1145/3448139.3448146>
- Ahn, J., Campos, F., **Nguyen, H.**, Hays, M., & Morrison, J. (2021). Co-designing for privacy, transparency, and trust in K-12 learning analytics. In *The 11th International Conference on Learning Analytics and Knowledge (LAK21)*.
<https://doi.org/10.1145/3448139.3448145>
- Ahn, J., **Nguyen, H.**, & Campos, F. From visible to understandable: Designing for teacher agency in education data visualizations. (2021). *Contemporary Issues in Technology & Teacher Education (CITE)*. <https://citejournal.org/volume-21/issue-1-21/general/from-visible-to-understandable-designing-for-teacher-agency-in-education-data-visualizations/>

- Campos, F., Ahn, J., Digiacomo, D., **Nguyen, H.**, & Hays, M. One chart, many meanings: Making sense of sensemaking in learning analytics dashboard design. (2021). *Journal of Learning Analytics*. <https://www.learning-analytics.info/index.php/JLA/article/view/7113>
- Santagata, R., König, J., Scheiner, T., **Nguyen, H.**, Adleff, A.-K., Yang, X., & Kaiser, G. Mathematics teacher learning to notice: a systematic review of studies of video-supported teacher education. (2021). *ZDM, International Journal of Mathematics Education*. <https://doi.org/10.1007/s11858-020-01216-z>
- 2020 **Nguyen, H.**, Wu, L., Fischer, C., Washington, G., & Warschauer, M. (2020). Increasing success in college: Examining the impact of a project-based introductory engineering course. *Journal of Engineering Education*. doi.org/10.1002/jee.20319
- Nguyen, H.** & Jenkins, J. (2020). In or out of sync: Federal funding and research in early childhood. *AERA Open* 6(4). [doi/10.1177/2332858420979568](https://doi.org/10.1177/2332858420979568)
- Nguyen, H.**, Wu, L., Washington, G., Lim, K.Y., & Fischer, C. (2020). Collaboration patterns and design practices in first-year project-based engineering. In *Proceedings of the 2020 American Society for Engineering Education Annual Conference & Exposition*.
- Nguyen, H.**, Lim, K.Y., Wu, L., Fischer, C., & Warschauer, M. (2020). "I thought we said": Perceived peer support, discourse cohesion, and regulation in engineering design. In *14th International Conference of the Learning Sciences: Interdisciplinarity of the Learning Sciences, ICLS 2020*. International Society of the Learning Sciences (ISLS).
- Nguyen, H.**, Ahn, J., Young, W., & Campos, F. (2020). Where's the learning in education crowdsourcing? In *Proceedings of the Seventh (2020) Annual ACM Conference on Learning@ Scale*. doi.org/10.1145/3386527.3406734
- Nguyen, H.**, Garcia, L., Jacob, S., Richardson, D., & Warschauer, M. (2020). Reflection as formative assessment of computational thinking in elementary grades. In *14th International Conference of the Learning Sciences: Interdisciplinarity of the Learning Sciences, ICLS 2020*. International Society of the Learning Sciences (ISLS).
- Nguyen, H.**, Garcia, L., Jacob, S., Richardson, D., & Warschauer, M. (2020). Elementary teachers' use of video reflections to reinforce computer science language and concepts. In *Proceedings of the Research on Equity and Sustained Participation in Engineering, Computing, and Technology*, IEEE Computer Society.
- Zhou, N., **Nguyen, H.**, Fischer, C., Richardson, D., & Warschauer, M. (2020) Hybrid professional development program to promote high school teachers' self-efficacy in computer science classroom. *ACM Transactions on Computing Education*. [doi/10.1145/3410631](https://doi.org/10.1145/3410631)

- Jacob, S., **Nguyen, H.**, Garcia, L., Richardson, D., & Warschauer, M. (2020). Teaching computational thinking to multilingual students through inquiry-based learning. In *Proceedings of the Research on Equity and Sustained Participation in Engineering, Computing, and Technology*, IEEE Computer Society.
- 2018 Jacob, S., **Nguyen, H.**, Tofel-Grehl, C., Richardson, D., & Warschauer, M. (2018). Teaching computational thinking to English learners. *NYS TESOL Journal*, 5(2), 12-24.

BOOK CHAPTERS

- 2021 **Nguyen, H.**, Campos, F., & Ahn, J. (2021). Designing for generative uncertainty in learning dashboards. In Ifenthaler, D., & Muhittin, S. (Eds), *Visualizations and Dashboards for Learning Analytics*.
- Nguyen, H.**, Campos, F., & Ahn, J. (2021). Expanding the design space of data and action in education: What co-designing with educators reveal about current possibilities and limitations. In Bowers, A. (Ed), *Data Visualization, Dashboards, and Evidence Use in Schools: Data Collaborative Workshop Perspectives of Educators, Researchers, and Data Scientists*. Teachers College, Columbia University. New York, NY. <https://doi.org/10.7916/d8-jj2g-e225>

WORK IN PROGRESS

- Under review **Nguyen, H.** Impact of conversational agent designs on systems thinking and discussion.
- In preparation Ahn, J., **Nguyen, H.**, Lopez, J., Chew, P., Ali, A., & Homer, B. Reminders, reflections, and relationships: Insights from the design of a chatbot for college advising.

CONFERENCE PRESENTATIONS

Undergraduate mentees are underlined.

- 2022 **Nguyen, H.** (2022, April). “Looks like robots, sounds like humans”: Surveying students’ conceptualizations of learning agents. Paper presented at *AERA Annual Meeting 2022*.
- 2021 **Nguyen, H.**, Lim, K.Y., Fischer, C., & Wu, L. (2021, June). Using relational event modeling to capture shared regulation interactions in collaborative learning. Poster presented at *The Annual Meeting of the International Society of the Learning Sciences*.
- Rosenberg, J., & **Nguyen, H.** (2021, April). How K-12 school districts communicated during the COVID-19 pandemic: A study using Facebook data. Poster presented at *The 11th International Conference on Learning Analytics and Knowledge (LAK21)*
- Nguyen, H.**, Ludovise, S., Wang, J., Huse, J., & Santagata, R. (2021, April). Modeling tools and systems thinking patterns in middle school. Paper presented at *AERA Annual Meeting 2021*.
- Nguyen, H.**, Ahn, J., Belgrave, A., Lee, J., Cawelti, L., Kim, H.E., Prado, Y., Santagata, R., & Villavicencio, A. (2021, April). Combining algorithmic approaches and human insights to establish trustworthiness in qualitative research. Paper presented at *AERA Annual Meeting 2021*.

- 2020
- Nguyen, H., Schmidt, D.,** Santagata, R.(2020, November). Crystal Code: Examining the impact of computational modeling on scientific systems thinking. Poster presented at *International Society for Technology in Education (ISTE)*. Anaheim, CA.
- Nguyen, H.** (2020, September). In or out of sync: Funding in early childhood through text analytics. Paper presented at *Conference on Educational Data Science*, Stanford, CA. [**Honorable Mention for Best Paper**]
- Nguyen, H.,** Santagata, R., & Warschauer, M. (2020, April). Co-design dynamics in community science education: Teachers, researchers, and community partners. *Paper presented at Annual American Educational Research Association*. San Francisco, CA. (Conference canceled)
- Fischer, C., **Nguyen, H.**, Feng, Y., Fiorini, S., Kalender, Y., McKay, T., ..., & Warschauer, M. (2020, April). Advanced placement course credit and undergraduate student success in STEM gateway courses. Paper presented at *Annual American Educational Research Association*. San Francisco, CA. (Conference canceled)
- Wegemer, C., Clark, H., Gyles, S., Kochmanski, N., Lee, U., **Nguyen, H.**, ..., & Steiss, J. (2020, April). Advancing research-practice partnerships: Leveraging the positionality of graduate student researchers. Poster presented at *Annual American Educational Research Association*. San Francisco, CA. (Conference canceled)
- 2019
- Jacob, S., **Nguyen, H.**, Garcia, L., Richardson, D., & Warschauer, M. (2019, October). Design of Computational Thinking Curriculum for Multilingual Learners [Presentation]. Connected Learning Summit. Irvine, CA.
- Nguyen, H.** (2019, September). Social Discourse to Promote Computational Thinking [Paper]. Paper presented at the Learning Sciences Graduate Student Conference. Evanston, IL.
- Nguyen, H.** Autonomous, but Together: Elementary Teachers' Self-Efficacy and Autonomy [Paper]. Annual American Educational Research Association. April 2019. Toronto, Canada
- Jacob, S., **Nguyen, H.**, Richardson, D., & Warschauer, M. Developing a Computational Thinking Curriculum for Multilingual Students: An Experience Report [Poster]. Research on Equity and Sustained Participation in Computing, Engineering, & Technology. February 2019. Minneapolis, MN.

TEACHING & MENTORING

Course

EDUC 10: Educational Research Design (Teaching assistant). Undergraduate course that guides students through the process of conducting educational research, by creating research questions, literature reviews, and qualitative and quantitative research designs. Enrollment: 125 students.

Workshop

Quantitative Ethnography Accelerator Program (Facilitator). 4-week research program for researchers interested in applying quantitative ethnography methodologies to integrate analytics into analyses of large-scale qualitative data.

Headway Program (Lead Mentor). 12-week program that guides high school and undergraduate students from Vietnamese schools through conducting independent research. 2021. Enrollment: 40 students.

R for Data Science (Facilitator). 8-week workshop series at UCI that introduces undergraduate and graduate students to data processing, visualization, and analyses in R. 2019-2021. Enrollment: 25-30 students per session.

Graphs & Visualizations in R (Facilitator). 1-session workshop to introduce undergraduate students to data visualizations in R. Center for Creating Opportunities through Education. 2019.

Computational Thinking Research from a Design-Based Approach. (Facilitator). Google ExploreCSR, Long Beach, CA. 2019

Undergraduate Club Lightbulb Conversation. (Mentor). Workshop to introduce undergraduate students at UCI to higher education and educational research. 2019.

Teaching in
K-12 settings

Freedom School Partner, Charlotte, NC (K-2 Teacher). 2015.

Durham Public Schools, Durham, NC (Teaching Assistant). 2014-2018.

HIGHLIGHTED EXPERIENCES

2018-2021

Researcher, Practical Measures, Routines and Representations (NSF Grants 1719744; 1620851; 1621238; 1620863)

Advisor: June Ahn (UC Irvine)

- Design the front-end of a [data visualization platform \(https://edsight.io\)](https://edsight.io).
- Manage usability testing. Collaborate with U.S. school stakeholders (teachers, instructional coaches, and school administrators) to define research questions, conduct studies, and develop designs.
- Conduct interviews, usability testing, co-design sessions, user journey mapping, and field studies

2020

Lead researcher. Proposal to the 2020 Tool Competition, Schmidt Futures Designing Collaborative Chatbot Personas in High School Science (unfunded, shortlisted for Phase 2 out of 3)

PI: Rossella Santagata (UC Irvine). Collaborator: Crystal Cove Conservancy.

2019-2021

Researcher, Data Scientist. Lilobot (IES grant R305H180051)

Advisor: June Ahn (UC Irvine)

- Design the front-end of a mobile interface for a chatbot aimed at increasing college enrollment.
- Develop natural language processing pipelines to model conversation topics, predict FAQ intents, and detect sentiment to match students with mentors.

2018-2020

Community Research Fellow. Orange County Education Collaborative (OCEAN)

Advisor: June Ahn (UC Irvine)

- Conduct qualitative and quantitative analyses of effectiveness and perceptions towards school improvement within an improvement network.

2018-2019 **Researcher.** CONECTAR: Collaborative Network of Educators for Computational Thinking for All Research (NSF Grants 1738825, 1923136)

Advisor: Mark Warschauer (UC Irvine)

- Develop materials with linguistic scaffolding to teach computer science for upper elementary students as part of a research-practice partnership.
- Perform qualitative and quantitative analyses of student learning in computer science.
- Facilitate professional development in computer science for teachers.

INVITED PRESENTATIONS

2021 Routines in Education Data Visualizations. Presentation at National Network of Education Research data club. April 2021. Remote.

2020 Equitable Practices in Cross-Institutional Research Projects. Presentation at the Sloan Equity and Inclusion in STEM Introductory Courses Meeting. June 2020. Remote.

2019 Educational Dashboard Expo. NSF Education Data Analytics Collaborative Workshop. December 2019. New York, NY.

Advanced Placement Course Credit and Student Success in STEM Gateway Courses. Presentation at the Sloan Equity and Inclusion in STEM Introductory Courses Meeting. June 2019. Ann Arbor, MI.

Design Thinking in Education. Workshop in Design Learning Environment class, UCI Masters of Arts in Teaching Program. July 2019. Irvine, CA.

SERVICES & OUTREACH

Services to the University

2021 Lab Coordinator, Digital Learning Lab
School of Education DECADE PhD Peer Buddy

2020 Lab Coordinator, Digital Learning Lab
Lab Coordinator, Design & Partnership Lab

2018-2022 Mentored undergraduate research assistants (Joiah Huse, Laura Wang, Dorthy Schmidt, Devin Rankin, Jingyi Su, Jose Cuevas, Karina Baeza, Jennifer Chau, Natasha Jain-Poster, Claudia Sorlis, Brooke Bierling, Shweta Karkee, Alondra Perez)

Services to the Profession

2021 Reviewer, Educational Researcher

2020-Present Reviewer, AERA Open

2020-2021 Reviewer, Journal of Engineering Education

2020-2021 Reviewer, International Conference of Quantitative Ethnography

2020-Present Reviewer, Learning Analytics & Knowledge Conference

2018-2019 Reviewer, American Society of Engineering Education

2018-2019 Reviewer, ACM Special Interest Group on Computer Science Education

2018-Present Reviewer, International Society of Learning Sciences