

Kutub Gandhi

PhD Candidate, CS / Human-Computer Interaction

ABD, est. graduation Spring '26

Kutub.Gandhi@hey.com

[Personal Website](#)

Research Interests

How can we use games, not just to teach, but to transform people — to get them to reflect on themselves and the world around them? I create games that touch on complex social and ethical issues, validated via appropriate mixed-methods, to understand the best ways to communicate via games and digital media.

Education

2020 — **Northeastern University, Ph.D. CS / Human-Computer Interaction**
Committee: Seth Cooper (advisor), Alexandra To, Bob De Schutter, Erik Harpstead (external, CMU)
Dissertation: Breaking down “transformative reflection” in games
ABD, est. graduation Spring 2026

2016 - 2020 **Rice University, B.A. Computer Science**

Teaching

Summer 2025 **Instructor of Record: *Programming in C++*** (Northeastern CS3520)
~40 students, built lectures and in-class exercises, adapted assignments

Utilized a combination of lecture, formative programming exercises, visualizations, live coding, and active learning, e.g. in-class reflective / predictive questions and peer instruction.

Received class evaluations consistently higher than university / department averages. E.g. “overall instructor effectiveness” was 4.76 as compared to university & department means of 4.48 & 4.42.

One student said “The instructor is excellent at breaking down difficult concepts into easily digestible terms for student learning. He was also so human and relatable, which made it easier to understand him and ask questions.”

Summer 2023 **Game Design Summer Camp Instructor** (Bridge to Calculus Game Program)
Program for underprivileged youth. ~20 students, built lectures and materials, guided students through group game design projects with the goal of building foundational programming skills and encouraging creative expression.

2020 — **Guest Lecturer: NEU Splash**

Once a semester, leading hour long lectures on game design and philosophy with high school students

2020 — **TA:** Most semesters TAing one of {*Game Programming*, *Computer Graphics*, *Game Engines*, *Programming in C++*}

2021 **Volunteer After School at King Elementary**

Variety of after school programs

Spring 2020 **In-Class TA: Computational Thinking** (Rice COMP140)

~150 students, providing input on course material and interacting with students in flipped class

2019 **Instructor of Record: Video Games and Philosophy** (Rice COLL182)

~10 students, built class and assignments

Taught two semesters; discussion based seminar where we analyzed video games as philosophical texts.

Students overwhelmingly rated the quality of the course as “outstanding”, with one student saying that the class “promoted really intriguing discussion between both friends and people I never met before... definitely worth my time!”

Fall 2019 **Lead TA: *Reasoning about Algorithms*** (Rice COMP382)
~100 students, lecturing and interacting with students in class

Research

In Progress Projects

Exploring Instructors’ Requirements for AI-Assistive Tools for Co-Creation

Interview study for requirements gathering; what AI support are instructors looking for in their classes?

Understanding the Effectiveness of Text for Communicating In-Game Learning Goals

Mixed-Methods A/B test of game design elements (specifically “reflective text”) that affect the communication of learning goals within a game.

Educational Game Co-Design with AI Assistance For Instructors.

Wizard of Oz study looking at how instructors utilize AI for educational game co-design.

Publications

Gandhi, K. & Cooper, S. (2024) “Going From a ‘Well Made Slideshow’ to a Full Game: Insights From the Development of an Urban Planning Educational Game” In Meaningful Play 2024.

Details the development and iteration process of an urban planning education game, used concept mapping to evaluate changes in user mental models in a constructivist

manner.

Josh Aaron Miller*, **Kutub Gandhi***, (*Joint First Authors) Matthew Alexander Whitby, Mehmet Kosa, Seth Cooper, Elisa D. Mekler, and Ioanna Iacovides. 2024. A Design Framework for Reflective Play. In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24). Association for Computing Machinery, New York, NY, USA, Article 519, 1–21. <https://doi.org/10.1145/3613904.3642455>

Meta analysis of other works in promoting reflection through play, along with a critical look at the design of a variety of games.

Kutub Gandhi. 2023. Cool Little Playable Things: Supporting Transformational Games Outside Formal Contexts. 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, 318–321. <https://doi.org/10.1145/3573382.3616032>

Doctoral Consortium. Opinion piece and literature review of explorables (intelligent tutoring systems).

Gandhi, K., Miller, J. A., & Cooper, S. (2022, September). "Philosophy is Seeped into Every Brick" - Weaving Reflective Elements into Mass-Market Games. In The 17th International Conference on the Foundations of Digital Games (FDG) 2022 (pp. 1-9).

Large scale online survey and qualitative analysis to identify techniques used in mass-market games to promote social and emotional learning (SEL)

Miller, J.A., **Gandhi, K.,** Gander, A. and Cooper, S., 2022. A Survey of Citizen Science Gaming Experiences. *Citizen Science: Theory and Practice*, 7(1), p.34. DOI: <http://doi.org/10.5334/cstp.500>

Large scale online survey and qualitative analysis to understand play experience in citizen science games.

Gandhi, K., Spatharioti, S. E., Eustis, S., Wylie, S., Cooper, S. (2022, November) Performance of Paid and Volunteer Image Labeling in Citizen Science — A Retrospective Analysis. In Proceedings of the AAAI Conference on Human Computation and Crowdsourcing

Statistical comparison of accuracy measures between volunteers and paid workers for image labeling. Finding that volunteers had a far higher rate of accuracy.

Gandhi, K., Miller, J. A., Spatharioti, S. E., Apte, A., Fatehi, B., Wylie, S., & Cooper, S. (2021, August). A Comparison of Augmented Reality and Browser Versions of a Citizen Science Game. In The 16th International Conference on the Foundations of Digital Games (FDG) 2021 (pp. 1-8).

Mixed methods A/B test comparing digital game to XR variant, and its implications for citizen science games. XR games are more enjoyable, but have accessibility issues.

Work Experience

- | | |
|-------------|--|
| 2024 | Software Engineer, Brain Game Center
Built an enterprise grade Typescript + C# tool for the rapid prototyping and deployment of psychological tests. Allowed test designers to create Figma mockups which were then automatically inserted into a Unity deployment pipeline. |
| 2020 - 2021 | ML / AI: Healthy Gulf
Created a Q-learning recommender system to bolster volunteer engagement via community-oriented minigames. Created an fine-tuned image labeling model for the identification of coastal wetlands damage. |
| 2019 | ML / AI: Civic Data Science at Georgia Tech
Created automated time series analysis based 'anomaly' detector for flood sensors, enabling maintenance team to easily identify and repair faulty sensors. Presented at Georgia Smart Cities Conference. |
| 2018 | ML / AI: EOG Resources
Created Machine Learning Model for emulating physics model. Model was verified via test data as 3x more accurate than previous, physics based model and |

ran ~1,000x faster. Presented findings to CEO, President, and Board of EOG, a Fortune 500 company.

Leadership

2024 — **Nonprofit Treasurer and Facilitator**

Managing \$500K in revenue. Reworking financial policies, handling resident disagreements and organizing meetings regarding repairs, budgetary concerns, social events, and financial policy.

2018 - 2020 **Student Government Representative**

Spearheaded an inclusivity initiative to promote mental health & community and won the college's Joan Whitney service award.

2019 - 2020 **Incoming Student Mentor**

Games

2025 **Other People's Money**

Discusses wealth inequality; won the Serious Play International Games Education Award for its effectiveness as both “a powerful educational tool and a call to action.”

2024 **Building Forward**

Simulated city with a focus on teaching concepts in urban planning: how cities evolve and grow. Designed in collaboration with four subject-matter-experts.

2021 **The Last AI**

Discusses ethics and AI. Created using custom engineered text-based game engine.

Skills

Research	Research Design, Qualitative Methods, Quantitative Methods, Statistics, Thematic Analysis, Data Visualization, User Experience Research
Programming	C++, C#, Linux, Data Science, AI, R, Machine Learning, Python, Java, Scala, Functional Programming, Haskell, Web Development, DevOps
Pedagogy	Constructivism, Active Learning, Flipped Classrooms, Lecturing, Bloom's Taxonomy, Computational Thinking
Game Design	Godot, Playtesting, MDA, Game Development Pipeline, Design Lenses, Best Practices

Reviewing

Reviewed for the following conferences, journals, and workshops:

CHIPlay (x5), FDG (x3), TOG (x3), EXAG (x2), DIS, CHI, Meaningful Play, COG, Gamifin.