

Erica M. Kleinman

Assistant Research Professor, Ghost Lab Co-Director, Instructor, College of Arts, Media, and Design, Northeastern University

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WEBSITE: erimedia.us

References Available Upon Request

Education

SEPT 2020 - JUNE 2023

University of California Santa Cruz - *Doctor of Philosophy* - Computational Media

SEPT 2017 - MAY 2020

Northeastern University - *Master of Science* - Computer Science

SEPT 2014 - JUNE 2016

Drexel University - *Master of Science* - Digital Media

SEPT 2009 - MAY 2013

Skidmore College - *Bachelor of Arts* - Film Studies

Positions

JULY 2025 - PRESENT

College of Arts, Media, and Design (Northeastern University) - *Assistant Research Professor*

- Co-Director of the Ghost Lab
- Founding member of EXCITE institute for experiential technologies
- Leading and co-leading research at the intersection of games, learning, and human computer interaction
- Co-advising PhD students
- Teaching graduate and undergraduate courses in Games, HCI, and Research Methods

JULY 2023 - JUNE 2025

Ghost Lab (Northeastern University) - *Postdoctoral Research Associate*

- Overseen by Dr. Casper Harteveld
- Conducted Research in collaboration with students and faculty at the intersection of games, learning, and Human Computer Interaction
- Advised PhD students
- Taught Courses in the Games Program
- Contributed to grant writing efforts
- Worked on Grants funded by NSF

NOVEMBER 2016 - JUNE 2023

GUI Lab (Northeastern University and University of California, Santa Cruz) - *Graduate Research Assistant*

- Advised by Dr. Magy Seif El-Nasr

- Conducted Research in collaboration with students and faculty on Human-Computer Interaction looking at Explainable AI, UX of AI, Learning, Esports and Complex Gameplay, Player and User Modeling, and Interactive Narrative
- Taught as both TA and Grad Student Instructor
- Mentored and Advised junior students
- Worked on Grants funded by NSF, DARPA, and ONR

Awards and Recognition

2026 - COLLEGE OF ARTS MEDIA AND DESIGN SUMMER RESEARCH DEVELOPMENT FELLOWSHIP
 2025 - IEEE TOG RECOGNITION FOR FAST, HIGH-QUALITY REVIEWS
 2022 - 2023 - UCSC JACK BASKIN & PEGGY DOWNES FELLOWSHIP
 2022 - IEEE TOG FAST AND FURIOUS AWARD FOR QUICK, HIGH QUALITY REVIEW TURN AROUND
 2020 - FDG2020 EXCEPTIONAL PAPER AWARD
 2019 - FDG2019 BEST PAPER NOMINEE
 2019 - GDC2019 GAME NARRATIVE REVIEW COMPETITION PLATINUM AWARD
 2018 - GDC2018 GAME NARRATIVE REVIEW COMPETITION GOLD AWARD
 2016 - DREXEL GRADUATE COLLEGE RESEARCH EXCELLENCE AWARD
 2015 - CHIPLAY STUDENT GAME DESIGN COMPETITION RUNNER UP
 2014 - 2016 - DREXEL UNIVERSITY DEAN'S FELLOWSHIP
 2013 - SKIDMORE COLLEGE BA CUM LAUDE
 2010 - 2013 SKIDMORE COLLEGE DEAN'S LIST

External Funding

CO-PI: AI-EMPOWERED REFLECTIVE LEARNING ACROSS THE VIRTUALITY SPECTRUM (NSF)
 Casper Hartevelde (PI), Erica Kleinman (Co-PI), Eileen McGivney (Co-PI), Seth Cooper (Co-PI),
 October 2024 - September 2027, \$900,000

Publications

BOOK CHAPTERS

2 Chapters

- ❖ Trotter, M., Gredin, V., **Kleinman, E.**, Wadenholt, G., & Svensson, J. (2026). Decision-Making and Strategic Thinking in Esports. In *The Psychology of Esports Performance* (pp. 75-95). Routledge.
- ❖ **NON-AUTHOR CONTRIBUTOR:** Seif El-Nasr, M., Nguyen, T., Canossa, A., Drachen, D. (2021). Sequence Analysis of Game Data. In *Game Data Science* (pp. 266-305). Oxford University Press.

JOURNAL PAPERS

9 Papers

- ❖ **TO APPEAR (November 2026):** Kleinman, E., Agashe, S. S., Jahani, R., Shyne, F. M., Facey, K., McGivney, E., Cooper, S., and Hartevelde, C. 2026. Virtual Reality Check: Checking Design Considerations for Reflection in Educational Virtual Reality Escape Rooms with Users. *Proc. ACM Hum.-Comput. Interact.* 10, 7, Article GAMES026 (November 2026)
- ❖ **TO APPEAR (November 2026):** Hartevelde, C., **Kleinman, E.**, Shirshekar, S., Kosa, M., and Sutherland, S. 2026. Players as Participants: A Review of Human Participants Practices in HCI Games Research. *Proc. ACM Hum.-Comput. Interact.* 10, 7, Article GAMES057 (November 2026)
- ❖ Yang, D., **Kleinman, E.**, Hartevelde, C., GPT for Games: An Updated Scoping Review (2020-2024). *IEEE Transactions on Games.*

- ❖ **Kleinman, E.**, Xu, J., Pfau, J., and Seif El-Nasr, M. 2024. "Trust the Process": An Exploratory Study of Process Visualizations for Self-Reflection in League of Legends. *Proc. ACM Hum.-Comput. Interact.* 8, CHI PLAY, Article 346 (October 2024), 28 pages.
- ❖ **Kleinman, E.**, Habibi, R., Yao, Y., Gayle, C., & Seif El-Nasr, M. (2022). "A Time and Phase for Everything"-Towards A Self Regulated Learning Perspective on Computational Support for Esports. *Proceedings of the ACM on Human-Computer Interaction*, 6(CHI PLAY), 1-27.
- ❖ **Kleinman, E.**, Shergadwala, M., Teng, Z., Villareale, J., Baryant, A., Zhu, J., Seif El-Nasr, M. (2022). Analyzing Students' Problem-Solving Sequences: A Human-in-the-loop Approach. *Journal of Learning Analytics*.
- ❖ **Kleinman E**, Gayle C, and Seif El-Nasr M (2021) "Because I'm Bad at the Game!" A Microanalytic Study of Self-Regulated Learning in League of Legends. *Front. Psychol.* 12:780234. doi: 10.3389/fpsyg.2021.780234
- ❖ **Kleinman, E.**, Preetham, N., Teng, Z., Bryant, A., & Seif El-Nasr, M. (2021). "What Happened Here!?" A Taxonomy for User Interaction with Spatio-Temporal Game Data Visualization. *Proceedings of the ACM on Human-Computer Interaction*, 5(CHI PLAY), 1-27.
- ❖ **Kleinman, E.**, Karo, K., & Zhu, J. (2019). From Immersion to Metagaming: Understanding Rewind Mechanics in Interactive Storytelling. *Entertainment Computing*.

FULL CONFERENCE PAPERS

30 Papers

- ❖ **TO APPEAR (November 2026):** Facey, K., Shyne, F., **Kleinman, E.**, McGivney, E., Hartevelde, C., Cooper, S., (2026 November) Towards Solver-Based Labelling of Player Tactics in Logic Puzzles. *Artificial Intelligence and Interactive Digital Entertainment Conference*.
- ❖ Troiano, G., Cassidy, M., **Kleinman, E.**, Puttick, G., Hartevelde, C., (2026 June) "Are You OK, Dr. Scratch?" Bridging the Gap Between Automated Computational Thinking Metrics and Classroom Realities. In *Proceedings of the 25th Annual ACM Interaction Design and Children Conference* (pp. 619 - 638)
- ❖ **Kleinman, E.**, Kim, S., Kim, S., Lee, H., Kim, J., Kang, D., Park, S., Hartevelde, C., Lee, B. (2026, May) "Do I really need this?": Illuminating Challenges in Integrating Computational Training Tools in Esports Coaching. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*
- ❖ McGivney, E., Olarinde, O., **Kleinman, E.**, Facey, K., Jahani, R., Agashe, S., Varma, M., Cooper, S. and Hartevelde, C. (2026) Assessing Learning Processes with Multimodal Data in Virtual Reality Learning Environments.
- ❖ Issak, A., Narayan, U., Srinivasan, R., **Kleinman, E.**, & Hartevelde, C. (2025, June). Kaleidoscope Gallery: Exploring Ethics and Generative AI Through Art. In *Proceedings of the 2025 Conference on Creativity and Cognition* (pp. 949-963).
- ❖ **Kleinman, E.**, Jahani, R., McGivney, E., Kosa, M., Cooper, S., Hartevelde, C. (2025, May). From Locked Rooms to Open Minds: Escape Room Best Practices to Enhance Reflection in Extended Reality Learning Environments. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*.
- ❖ Lee, H., **Kleinman, E.**, Kim, N., Park, S., Hartevelde, C., Lee, B. (2025, May). Crafting Champions: An Observation Study of Esports Coaching Processes. In *Proceedings of the CHI Conference on Human Factors in Computing Systems*.

- ❖ Harteveld, C., Javvaji, N., Mohaddesi, O., **Kleinman, E.**, Daniels, K., Jackson, D., & Troiano, G. M. (2024, July). RePresent: Enabling Access to Justice for Pro Se Litigants via Co-Authored Serious Games. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference* (pp. 3225-3242).
- ❖ **Kleinman, E.**, Habibi, R., Powell, G. B., Reeves, B., Prather, J., & Seif El-Nasr, M. (2024, May). "Backseat Gaming" A Study of Co-Regulated Learning within a Collegiate Male Esports Community. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (pp. 1-14).
- ❖ Maram, S. S., **Kleinman, E.**, Villareale, J., Zhu, J., & Seif El-Nasr, M. (2024, May). "Ah! I see"-Facilitating Process Reflection in Gameplay through a Novel Spatio-Temporal Visualization System. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (pp. 1-19).
- ❖ Pfau, J., Charan, M., **Kleinman, E.**, & Seif El-Nasr, M. (2024, May). Damage Optimization in Video Games: A Player-Driven Co-Creative Approach. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (pp. 1-16).
- ❖ Yang, D., **Kleinman, E.**, Troiano, G. M., Tochilnikova, E., & Harteveld, C. (2024, May). Snake Story: Exploring Game Mechanics for Mixed-Initiative Co-creative Storytelling Games. In *Proceedings of the 19th International Conference on the Foundations of Digital Games* (pp. 1-11).
- ❖ Yang, D., **Kleinman, E.**, & Harteveld, C. (2024, August). GPT for games: A scoping review (2020-2023). In *2024 IEEE Conference on Games (CoG)* (pp. 1-8). IEEE.
- ❖ **Kleinman, E.**, Villareale, J., Shergadwala, M. N., Teng, Z., Bryant, A., Zhu, J., & El-Nasr, M. S. (2023, April). "What else can I do?" Examining the Impact of Community Data on Adaptation and Quality of Reflection in an Educational Game. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1-12).
- ❖ **Kleinman, E.**, Villareale, J., Shergadwala, M., Teng, Z., Bryant, A., Zhu, J., Seif El-Nasr, M. (2022). Towards an Understanding of how Players Make Meaning from Post-Play Process Visualizations. ICEC 2022.
- ❖ **Kleinman, E.**, Shergadwala, M., Seif El-Nasr, M. (2022). Kills, Deaths, and (Computational) Assists: Identifying Opportunities for Computational Support in Esport Learning. 2022 CHI Conference on Human Factors in Computing Systems.
- ❖ Partlan, N., **Kleinman, E.**, Howe, J., Ahmad, S., Marsella, S., and Seif El-Nasr, M. (2021). Design-Driven Requirements for Computationally Co-Creative Game AI Design Tools. *Foundations of Digital Games*.
- ❖ **Kleinman, E.**, Chojnacki, S., and Seif El-Nasr, M. (2021). The Gangs All Here: How People Used Games to cope with COVID19 Quarantine. CHI 2021.
- ❖ Carstensdottir, E., **Kleinman, E.**, Williams, R., and Seif El-Nasr, M. (2021). "Naked and on fire":Examining Player Agency Experiences in Narrative-Focused Gameplay. CHI 2021.
- ❖ **FDG 2020 EXCEPTIONAL PAPER RECIPIENT: Kleinman, E.**, Ahmad, S., Teng, Z., Bryant, A., Nguyen, T. H. D., Harteveld, C., & Seif El-Nasr, M. (2020). "And then they Died": Using Action Sequences for Data-Driven, Context-Aware Gameplay Analysis. *Foundations of Digital Games*.
- ❖ Seif El-Nasr, M., **Kleinman, E.** (2020). Data-Driven Game Development: Ethical Considerations. *Foundations of Digital Games*.
- ❖ Jemmali, C., **Kleinman, E.**, Bunian, S., Almeda, M.V., Rowe, E., & Seif El-Nasr, M. (2020). MAADS: Mixed-Methods Approach for the Analysis of Debugging Sequences of Beginner Programmers. *Technical Symposium on Computer Science Education*.

- ❖ Almeda, M.V., **Kleinman, E.**, Jemmali, C., Ithier, C., Rowe, E., & Seif El-Nasr, M. (2020). Labeling Debugging in May's Journey Gameplay. Technical Symposium on Computer Science Education.
- ❖ **Kleinman, E.**, Carstensdottir, E., & Seif El-Nasr, M. (2019). A Model for Analyzing Diegesis in Digital Narrative Games. International Conference on Interactive Digital Storytelling.
- ❖ Ahmad, S., Bryant, A., **Kleinman, E.**, Teng, Z., Nguyen, T. H. D., & Seif El-Nasr, M. (2019) Modeling Individual and Team Behavior through Spatio-Temporal Analysis. Annual Symposium on Computer-Human Interaction in Play.
- ❖ Carstensdottir, E., **Kleinman, E.**, & Seif El-Nasr, M. (2019) Player Interaction in Narrative Games: Structure and Narrative Progression Mechanics. Foundations of Digital Games.
- ❖ **FDG 2019 BEST PAPER NOMINEE:** Hartevelde, C., **Kleinman, E.**, Rizzo, P., Schouten, D., Nguyen, T.H., Liberty, S., Kimbrough, W., Fombelle, P., & Seif El-Nasr, M. (2019) Teamwork and Adaptation in Games (TAG): A Survey to Gauge Teamwork. Foundations of Digital Games.
- ❖ **Kleinman, E.**, Carstensdottir, E., & Seif El-Nasr, M. (2018) Going Forward by Going Back: Re-defining Rewind Mechanics in Narrative Games. Foundations of Digital Games.
- ❖ Partlan, N., Carstensdottir, E., Snodgrass, S., **Kleinman, E.**, Smith, G., Hartevelde, C., & Seif El-Nasr, M. (2018) Exploratory Automated Analysis of Structural Features of Interactive Narrative. Artificial Intelligence and Interactive Digital Entertainment Conference.
- ❖ **Kleinman E.**, Fox V., Zhu J. (2016) Rough Draft: Towards a Framework for Metagaming Mechanics of Rewinding in Interactive Storytelling. International Conference on Interactive Digital Storytelling.

WORKSHOP PAPERS, POSTERS, WIPS, DEMOS

14 Papers

- ❖ **TO APPEAR (November 2026):** **Kleinman, E.** and Hartevelde, C. 2026. Esports or Esportsification? Prompting Further Discussion of Esports Definitions. In Companion Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY Companion '26), November 2-5, 2026, York, United Kingdom. ACM, New York, NY, USA, 4 pages.
- ❖ McGivney, E., Olarinde, O., **Kleinman, E.**, (2026, June). "How Are You Solving That?": Improving Learning in Virtual Reality With a Reflective AI Agent. In General Proceedings of the 6th Annual Meeting of the International Society of the Learning Sciences 2026 (pp. 195-198)
- ❖ Yang, D., **Kleinman, E.**, & Hartevelde, C. (2026, April). Bridging Pedagogy and Play: Introducing a Language Mapping Interface for Human-AI Co-Creation in Educational Game Design. In Proceedings of the Extended Abstracts of the 2026 CHI Conference on Human Factors in Computing Systems (pp. 1-6).
- ❖ Olarinde, O., McGivney, E., **Kleinman, E.**, Shyne, F., Facey, K., Cooper, S., & Hartevelde, C. (2025). Reflecting in-Action: Improving Learning in Extended Reality with AI-empowered Reflection. Connected Learning Summit, Cambridge, MA.
- ❖ Shyne, F., Agashe, S., Jahani, R., Facey, K., **Kleinman, E.**, Cooper, S., Hartevelde, C., & McGivney, E. (2025). Multi-Modal Escape Room for Reflective Learning. Foundations of Digital Games, Vienna, Austria. (Non-archival)
- ❖ **Kleinman, E.**, and Hartevelde, C. 2024. The Untapped Potential of Escape Rooms as Gamified Research Environments. In Companion Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY Companion '24), October 14-17, 2024, Tampere, Finland. ACM, New York, NY, USA, 4 pages.

- ❖ Ebrahimi, A., Cox, J., **Kleinman, E.**, & De Schutter, B. (2024, May). Hidden Heroes: A thematic analysis of a game jam designed around authentic stories. In *Proceedings of the 19th International Conference on the Foundations of Digital Games* (pp. 1-4).
- ❖ **Kleinman, E.**, Lynn, S., Loyall, B., Seif El-Nasr, M., (2023). Towards a Human-in-the-Loop System for Authoring Game AI using Behavior Languages, In *The First Workshop on Human-AI Interaction through Play, Foundations of Digital Games*.
- ❖ **Kleinman, E.**, Seif El-Nasr, M.. (2021). Using Data to "Git Gud": A Push for a Player-Centric Approach to the Use of Data in Esports, In *EHPHCl: Esports and High Performance HCI Workshop, 2021 CHI Conference on Human Factors in Computing Systems*.
- ❖ **Kleinman, E.**, Seif El-Nasr, M. (2020). Interactive Visualization For Strategy Acquisition In Esports Spectatorship. *SEEGames Workshop, 2020 CHI Conference on Human Factors in Computing Systems*. (Non-archival)
- ❖ Jemmali, C., **Kleinman, E.**, Bunian, S., Almeda, M. V., Rowe, E., & Seif El-Nasr, M. (2019) Using Game Design Mechanics as Metaphors to Enhance Learning of Introductory Programming Concepts. *Foundations of Digital Games*.
- ❖ Partlan, N., Carstensdottir, E., **Kleinman, E.**, Snodgrass, S., Harteveld, C., Smith, G., Matuk, C., Sutherland, S. C., & Seif El-Nasr, M. (2019) Evaluation of a Graph-Based Representation for Interactive Narrative. *Foundations of Digital Games*.
- ❖ Carstensdottir, E., **Kleinman, E.**, Seif El-Nasr, M. (2017) Towards an Interaction Model for Interactive Narratives. *International Conference on Interactive Digital Storytelling*.
- ❖ **CHIPLAY 2015 STUDENT GAME DESIGN COMPETITION RUNNER UP:** Baranoski, J., **Kleinman, E.**, Wang, Z., Tucker, M., Ahnert, J., Schell, J., Doshi, R., Rank, S., & Zhu, J. (2015) Matsya: A Cultural Game of Flow and Balance. *Annual Symposium on Computer-Human Interaction in Play*.

Invited Talks and Presentations

- ❖ Chukoskie, L., **Kleinman, E.**, (2026) Roundtable Discussions: Gaming and Esports Positive Synergy with Education and Research. *Augmented World Expo*.
- ❖ **Kleinman, E.**, Shergadwala, M., Seif El-Nasr, M. (2021) "Tell me Why I Keep Dying": A Qualitative Study of User Requirements for AI Assistants for Esports. *Esports Conference, University of California, Irvine*.
- ❖ Ahmad, S., **Kleinman, E.**, & Seif El-Nasr, M. (2020) New Methodology for Interactive Behavior Analytics. *Game Intelligence and Informatics Workshop, PAKDD*.
- ❖ **Kleinman, E.**, Seif El-Nasr, M. (2020) A Detailed Look at Users' Experience through Interactive Visualizations of their Data. *Games User Research Virtual Summer Camp*.

Teaching Experience

- Instructor: GSND 6320 (Northeastern) - Psychology of Play (Spring 2026)
- Instructor: GAME 2750 (Northeastern) - Games Criticism and Theory (Spring 2026)
- Instructor: GSND 5130 (Northeastern) - Mixed Research Methods for Games (Fall 2025, Fall 2026)
- Instructor: GAME 2500 (Northeastern) - Foundations of Game Design (Summer 2 2024, Spring 2025)

- Instructor: GSND 5111 (Northeastern) - Graduate Seminar (Fall 2024)
- Instructor: GAME 3700 (Northeastern) - Rapid Idea Prototyping (Spring 2024)
- Instructor: GAME 251 (UCSC) - Games User Research (Winter 2023)
- Teaching Assistant: HCI 271 (UCSC) - HCI Capstone (Spring 2022)

Supervision, Mentoring, and Advising Experience

- Supervising: Gefei (Godfrey) Yang - Visiting Scholar, GSND Graduate, NEU
- Co-Advising: Uttkarsh Narayan - PhD Student, Interdisciplinary Design and Media, NEU
- Co-Advising: Daijin Yang - PhD Student, Interdisciplinary Design and Media, NEU
- Mentoring: Alayt Issak - PhD Student, Interdisciplinary Design and Media, NEU
- Mentoring: Sai Siddartha Maram - PhD Student, Computational Media, UCSC
- Mentoring: Stefany Arevalo - Masters Student, Computational Media, UCSC
- Mentoring: Jason Xu - Undergraduate, Computational Media, UCSC
- Mentoring: Derusha Baskaran - Masters Student, HCI, UCSC
- Mentoring: Christian Gayle - Masters Student, Games and Playable Media, UCSC
- Mentoring: Yichen Yao - Masters Student, Games and Playable Media, UCSC
- Mentoring: Yuanzhu Wu - Masters Student, Games and Playable Media, UCSC
- Mentoring: Sara Chojnacki - Masters Student, Computer Science, Northeastern University

External Service

ORGANIZATION AND LEADERSHIP

- ACM CHIPlay Annual Symposium on Computer-Human Interaction in Play
 - Student Game Design Competition Co-Chair (2026)
 - Student Game Design Competition Co-Chair (2025)
 - Associate Chair (2025, 2026)
 - Transparency and Ethics in Game Data Workshop General Chair (2024)
- ACM CHI Conference on Human Factors in Computer Systems
 - Associate Chair (2026)
 - Assistant to the SCs of Usability and UX (2020 and 2021)
- Foundations of Digital Games
 - Track Chair (Game Analytics and Visualization) (2024)
- AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment
 - Esports Analytics Workshop Co-Organizer (2022)
- IEEE Conference on Games (COG)
 - Associate Chair (2023 and 2025)
- IEEE Transactions on Games (TOG)
 - Associate Editor (2026-Present)

PRIMARY PEER REVIEW VENUES

- ACM CHI Conference on Human Factors in Computer Systems
- ACM CHIPlay Annual Symposium on Computer-Human Interaction in Play
- International Journal of Human-Computer Interaction

- International Conference of Interactive Digital Storytelling
- Foundations of Digital Games
- IEEE Conference on Games
- IEEE Transactions on Games
- Entertainment Computing
- Computers in Human Behavior