Stephen J. Hutt **Assistant Professor**

CONTACT INFORMATION
56 East River Road
Minneapolis, MN, 55455, USA
(612) 624-0691
shutt@umn.edu

EDUCATION

University of Colorado, Boulder, Boulder, CO

Ph.D., Computer Science, August 2020

Thesis Topic: *Scaling Up: Moving Automated Gaze-Based Engagement Detection Out Of the Lab*
Advisor: Sidney D'Mello, Ph.D

University of York, York, United Kingdom

M.Eng.,*First Class Honours* Computer Science with Artificial Intelligence, July 2015

Thesis Topic: *Evolutionary Techniques for Developing Computer Poker Agents*
Advisor: Dan Franks, Ph.D

University of California, Santa Cruz, Santa Cruz, CA

Exchange Year, Computer Science, 2012-2013

RESEARCH INTERESTS

Human Centered AI, Learning Analytics, Machine Learning, Affective Computing, Fair AI, Adaptive Learning Technologies, Learning Sciences, Human Computer Interaction

EMPLOYMENT

Assistant Professor August 2025 - Present
Department of Educational Psychology
University of Minneapolis Twin Cities

Assistant Professor September 2022 - August 2025
Department of Computer Science
University of Denver

Assistant Director August 2021 - August 2022
Penn Center for Learning Analytics
University of Pennsylvania

Postdoctoral Researcher August 2020 - August 2022
Graduate School of Education,
University of Pennsylvania
Supervisor: Ryan Baker, Ph.D

RESEARCH FUNDING

Institute of Educational Science. 2024-2026
Studying how Patterns in Self-Regulated Learning Differ Across Groups of Students in Multiple OpenStax Courses
Baker, R.S. (PI), Hutt, S (Co-PI) $916,771, ($303,126 to DU) - Transferred to UMN
Award #R305N240049,

National Science Foundation. 2024-2026
Collaborative Research: Data-Driven Interviewing to Study the Embodied Cognitive Shifts that Occur During Geometry Learning
Hutt S. (DU PI). Collaborative Award with two other institutions. Total funding $763,407 ($166,866 to DU) - Transferred to UMN
Award #SBE-2341412

AERDF, EF+ Math. 2024-2025
CueThinkEF+
Sethuraman, S. (PI), Hutt, S. (Co-PI, Subcontract Lead) $900,000 ($180,000 to DU) - Transferred to UMN

AERDF, EF+ Math. 2023
Making learning visible: scalable, multi-system detection of self-regulation related to EF
Baker, R.S. (PI), Hutt, S (Co-PI) $899,702, ($23,923 to DU)

National Science Foundation. 2022-2024
Collaborative Research: Frameworks: Cyber Infrastructure for Shared Algorithmic and Experimental Research in Online Learning
Baker, R.S. (PI), Hutt, S (Subcontract lead) $1,399,995, ($116,625 to DU)
Award #DRL-1931419

JOURNAL ARTICLES

1. A. F. Zambrano, A. Barany, J. Ocumpaugh, N. Nasiar, J. Vandenberg, A. Goslen, J. Esiason, J. Rowe, and **S. Hutt**, "Unlocking Gameplay Insights with Epistemic (Ordered) Network Analysis: Understanding the Potential of Video Games to Foster Authentic Scientific Practices in STEM Education," *Journal of Science Education and Technology*, Mar. 2025, ISSN: 1573-1839. DOI: 10.1007/s10956-025-10213-4 (IF = 4.2) [1]

2. J. Ocumpaugh, R. D. Roscoe, R. S. Baker, **S. Hutt**, and S. J. Aguilar, "Toward Asset-based Instruction and Assessment in Artificial Intelligence in Education," *International Journal of Artificial Intelligence in Education*, Jan. 2024, ISSN: 1560-4306. DOI: 10.1007/s40593-023-00382-x (IF = 4.7)

3. R. S. Baker, **S. Hutt**, N. Bosch, J. Ocumpaugh, G. Biswas, L. Paquette, J. M. A. Andres, N. Nasiar, and A. Munshi, "Detector-driven classroom interviewing: Focusing qualitative researcher time by selecting cases in situ," en, *Educational technology research and development*, Dec. 2023, ISSN: 1556-6501. DOI: 10.1007/s11423-023-10324-y. Accessed: Mar. 12, 2024 (IF = 4.8)

4. B. Lira, M. Gardner, A. Quirk, C. Stone, A. Rao, L. Ungar, **S. Hutt**, L. Hickman, S. K. D'Mello, and A. L. Duckworth, "Using artificial intelligence to assess personal qualities in college admissions," *Science Advances*, vol. 9, no. 41, eadg9405, 2023. DOI: 10.1126/sciadv.adg9405 (IF = 13.7)

5. **S. Hutt**, A. Wong, A. Papoutsaki, R. S. Baker, J. I. Gold, and C. Mills, "Webcam-based eye tracking to detect mind wandering and comprehension errors," *Behavior Research Methods*, Jan. 2023, ISSN: 1554-3528. DOI: 10.3758/s13428-022-02040-x (IF = 7.2)

6. J. Zhang, J. M. A. L. Andres, **S. Hutt**, R. S. Baker, J. Ocumpaugh, N. Nasiar, C. Mills, J. Brooks, S. Sethuaman, and T. Young, "Using machine learning to detect SMART model cognitive operations in mathematical problem-solving process," *Journal of Educational Data Mining*, vol. 14, no. 3, pp. 76–108, Dec. 2022. DOI: 10.5281/zenodo.7304763 (IF = 4.5 - Converted from Cite Score)

7. A. Munshi, G. Biswas, R. Baker, J. Ocumpaugh, **S. Hutt**, and L. Paquette, "Analysing adaptive scaffolds that help students develop self-regulated learning behaviours," *Journal of Computer Assisted Learning*, vol. 39, no. 2, pp. 351–368, 2023. DOI: https://doi.org/10.1111/jcal.12761 (IF 5.1)

[1] 5 year impact factor (IF) provided when available. 5 year IF preferred over yearly IF because yearly impact factors tend to fluctuate considerably

8. **S. Hutt**, R. S. Baker, M. M. Ashenafi, J. M. Andres-Bray, and C. Brooks, "Controlled outputs, full data: A privacy-protecting infrastructure for mooc data," *British Journal of Educational Technology*, vol. 53, no. 4, pp. 756–775, 2022. DOI: https://doi.org/10.1111/bjet.13231 (IF = 6.7)

9. Y. Zhang, L. Paquette, N. Bosch, J. Ocumpaugh, G. Biswas, **S. Hutt**, and R. S. Baker, "The evolution of metacognitive strategy use in an open-ended learning environment: Do prior domain knowledge and motivation play a role?" *Contemporary Educational Psychology*, vol. 69, p. 102 064, 2022, ISSN: 0361-476X. DOI: https://doi.org/10.1016/j.cedpsych.2022.102064 (IF = 3.9)

10. M. Gardener, **S. Hutt**, D. Kamentz, A. L. Duckworth, and S. K. D'Mello, "How does high school extracurricular participation predict bachelor's degree attainment? it's complicated," *Journal of Research on Adolesence*, 2020. DOI: 10.1111/jora.12557 (IF = 4.6)

11. **S. Hutt**, K. Krasich, C. Mills, N. Bosch, S. White, J. R. Brockmole, and S. K. D'Mello, "Automated gaze-based mind wandering detection during computerized learning in classrooms," *User Modeling and User-Adapted Interaction*, Jun. 2019, ISSN: 1573-1391. DOI: 10.1007/s11257-019-09228-5 (IF = 4.3)

12. B. M. Galla, E. P. Shulman, B. Plummer, M. Gardner, **S. Hutt**, J. Goyer, A. Finn, S. D'Mello, and A. Duckworth, "Why high school grades are better predictors of on-time college graduation than are admissions test scores: The role of self-regulation and cognitive ability.," *American Educational Research Journal*, 2019. DOI: 10.3102/0002831219843292 (IF = 5.1)

13. K. Krasich, R. McManus, **S. Hutt**, M. Faber, S. K. D'Mello, and J. R. Brockmole, "Gaze-based signatures of mind wandering during real-world scene processing," *Journal of Experimental Psychology: General*, vol. 147, no. 8, p. 1111, 2018. DOI: 10.1037/xge0000411 (IF = 4.7)

Conference Publications - Strictly Peer Reviewed

All conference proceedings listed below have been strictly peer-reviewed. Each paper is typically reviewed by three reviewers and one senior program committee member, at a minimum. The acceptance rate for papers into these proceedings is typically under 30%, with many less than 25%. For each accepted paper, an oral presentation is given at the conference (which are not listed below under conference presentations to avoid redundancy). Acceptance into the proceedings of conference programs is a sign of scholarly excellence in my respective field(s). When available, Acceptance rates (ARs) are provided.

14. A. E. B. Stewart and **S. Hutt**, "Beyond the numbers: Socio-cultural context as a reframe for learning analytics," in *Proceedings of the 16th International Learning Analytics and Knowledge Conference*, LAK '26, New York, NY, USA: Association for Computing Machinery, In Press

15. C. Steadman, **S. Hutt**, M. Opatz, and P. Kendeou, "From diagnostics to prediction: A machine learning approach to understanding reading development," in *Proceedings of the 16th International Learning Analytics and Knowledge Conference*, LAK '26, New York, NY, USA: Association for Computing Machinery, In Press

16. S. Leutenegger, **S. Hutt**, A. Hannum, S. Das, A. Oleson, A. Leto, and S. Shrestha, "Starting with dei and ethics – a new first-year college computer science introduction," in *Proceedings of the 57th ACM Technical Symposium on*

Computer Science Education (SIGCSE 2026), SIGCSE 2026, February 18–21, 2026, St. Louis, Missouri, USA: Association for Computing Machinery, Feb. In Press

17. **S. Hutt**, "Ai as an accelerant for the learning sciences: Opportunities, risks, and a vision for the future," in *The Chen Institute Symposium for AI Accelerated Science, 2025*, San Francisco, CA, 2025

18. G. Jaiyeola, A. Wong, R. Bryck, C. Mills, and **S. Hutt**, "Using webcam-based eye tracking during a learning task to understand neurodivergence," in *Proceedings of the 18th International Conference on Educational Data Mining*, C. Mills, G. Alexandron, D. Taibi, G. L. Bosco, and L. Paquette, Eds., Palermo, Italy: International Educational Data Mining Society, Jul. 2025, pp. 354–364, ISBN: 978-1-7336736-6-2. DOI: 10.5281/zenodo.15870209 (AR=27%) [2]

19. G. D. Jaiyeola, A. Y. Wong, R. L. Bryck, C. Mills, and **S. Hutt**, "One size does not fit all: Considerations when using webcam-based eye tracking to models of neurodivergent learners' attention and comprehension," in *Proceedings of the 15th International Learning Analytics and Knowledge Conference*, LAK '25, Association for Computing Machinery, 2025, pp. 24–35, ISBN: 9798400707018. DOI: 10.1145/3706468.3706472 (AR=30%)

20. J. Ocumpaugh, N. Nasiar, A. F. Zambrano, A. Goslen, J. Vandenberg, J. Esiason, J. Rowe, and **S. Hutt**, "Refocusing the lens through which we view affect dynamics: The skills, difficulty, value, efficacy and time model," in *Proceedings of the 15th International Learning Analytics and Knowledge Conference*, LAK '25, Association for Computing Machinery, 2025, pp. 192–203, ISBN: 9798400707018. DOI: 10.1145/3706468.3706495 (AR=30%)

21. R. Baker and **S. Hutt**, "Morf: A post-mortem," in *Proceedings of the 15th International Learning Analytics and Knowledge Conference*, LAK '25, Association for Computing Machinery, 2025, pp. 797–802, ISBN: 9798400707018. DOI: 10.1145/3706468.3706478 (AR=30%)

22. J. Esiason, A. Goslen, A. Felipe Zambrano, N. Nasiar, **S. Hutt**, J. Rowe, J. Ocumpaugh, and J. Vandenberg, "Predicting student reasoning for self-reported affect in game-based learning environments," in *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 2*, SIGCSETS 2025, Pittsburgh, PA, USA: Association for Computing Machinery, 2025, pp. 1453–1454, ISBN: 9798400705328. DOI: 10.1145/3641555.3705232. [Online]. Available: https://doi.org/10.1145/3641555.3705232

23. A. Goslen, J. Vandenberg, A. F. Zambrano, N. Nasiar, **S. Hutt**, J. Ocumpaugh, and J. Rowe, "Student perspectives on expressing academic emotions in digital game-based learning," in *Proceedings of the 2024 on ACM Virtual Global Computing Education Conference V. 2*, SIGCSE Virtual 2024, Virtual Event, NC, USA: Association for Computing Machinery, 2024, pp. 316–317, ISBN: 9798400706042. DOI: 10.1145/3649409.3691087. [Online]. Available: https://doi.org/10.1145/3649409.3691087

24. N. Nasiar, A. F. Zambrano, J. Ocumpaugh, A. Goslen, J. Rowe, J. Vandenberg, J. Esiason, and **S. Hutt**, "The influence of different measurement approaches on student affect transitions using ordered networks", booktitle="advances in quantitative ethnography," Y. J. Kim and Z. Swiecki, Eds., Springer Nature Switzerland, 2024, pp. 195–203, ISBN: 978-3-031-76332-8

[2] Acceptance Rates (AR) provided where available

25. **S. Hutt** and G. Hieb, "Scaling up mastery learning with generative ai: Exploring how generative ai can assist in the generation and evaluation of mastery quiz questions," in *Proceedings of the Eleventh ACM Conference on Learning @ Scale*, L@S '24, Atlanta, GA, USA: Association for Computing Machinery, 2024, pp. 310–314, ISBN: 9798400706332. DOI: 10.1145/3657604.3664699 (AR=24%)

26. R. Baker, **S. Hutt**, C. A. Brooks, N. Srivastava, and C. Mills, "Open science and educational data mining: Which practices matter most?" In *Proceedings of the 17th International Conference on Educational Data Mining.*, Atlanta, GA, USA: Society for Educational Data Mining, 2024 (AR=30%)

27. A. Zambrano, J. Ocumpaugh, N. Nasiar, A. Goslen, J. Zhang, J. Rowe, J. Esiason, J. Vandenberg, and **S. Hutt**, "Says who? how different ground truth measures of emotion impact student affective modeling.," in *Proceedings of the 17th International Conference on Educational Data Mining.*, Atlanta, GA, USA: Society for Educational Data Mining, 2024 (AR=30%)

28. **S. Hutt**, A. DePiro, J. Wang, S. Rhodes, R. S. Baker, G. Hieb, S. Sethuraman, J. Ocumpaugh, and C. Mills, "Feedback on feedback: Comparing classic natural language processing and generative ai to evaluate peer feedback," in *Proceedings of the 14th Learning Analytics and Knowledge Conference*, LAK '24, , Kyoto, Japan, Association for Computing Machinery, 2024, pp. 55–65, ISBN: 9798400716188. DOI: 10.1145/3636555.3636850(AR=26.1%)

29. A. F. Zambrano, A. Barany, J. Ocumpaugh, N. Nasiar, **S. Hutt**, A. Goslen, J. Rowe, J. Lester, E. Wiebe, and B. Mott, "Cracking the code of learning gains: Using ordered network analysis to understand the influence of prior knowledge," in *Advances in Quantitative Ethnography*, G. Arastoopour Irgens and S. Knight, Eds., Cham: Springer Nature Switzerland, 2023, pp. 18–33, ISBN: 978-3-031-47014-1

30. V. Kuvar, J. W. Y. Kam, **S. Hutt**, and C. Mills, "Detecting when the mind wanders off task in real-time: An overview and systematic review," in *Proceedings of the 25th International Conference on Multimodal Interaction*, ICMI '23, Paris, France: Association for Computing Machinery, 2023, pp. 163–173, ISBN: 9798400700552. DOI: 10.1145/3577190.3614126 (AR=10%)

31. **S. Hutt**, S. Das, and R. S. Baker, "The right to be forgotten and educational data mining: Challenges and paths forward," in *Proceedings of the 16th International Conference on Educational Data Mining*, 2023 (AR=30%)

32. J. M. A. L. Andres, R. S. Baker, **S. Hutt**, C. Mills, J. Zhang, S. Rhodes, and A. DePiro, "Anxiety, achievement, and self-regulated learning in cuethink," in *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023*, 2023, pp. 258–265. DOI: 10.22318/icls2023.737540 (AR=32.5%)

33. J.-M. Andres-Bray, **S. Hutt**, and R. S. Baker, "Exploring cross-country prediction model generalizability in moocs," in *Proceedings of the Tenth ACM Conference on Learning @ Scale*, 2023, pp. 183–194 (AR = 28%) **- Best Paper Award, Honourable Mention**

34. N. Nasiar, R. S. Baker, Y. Zou, J. Zhang, and **S. Hutt**, "Modeling problem-solving strategy invention (pssi) behavior in an online math environment," in *International Conference on Artificial Intelligence in Education*, Springer, 2023, pp. 453–459 (AR=21.1%)

35. A. Goslen, N. Henderson, J. Rowe, J. Zhang, **S. Hutt**, J. Ocumpaugh, E. Wiebe, K. E. Boyer, B. Mott, and J. Lester, "Enhancing engagement modeling in game-based learning environments with student-agent discourse analysis," in *International Conference on Artificial Intelligence in Education*, Springer, 2023, pp. 681–687 (AR=21.1%)

36. N. Nasiar, A. F. Zambrano, J. Ocumpaugh, **S. Hutt**, A. Goslen, J. Rowe, J. Lester, N. Henderson, E. Wiebe, K. Boyer, et al., "It's good to explore: Investigating silver pathways and the role of frustration during game-based learning," in *International Conference on Artificial Intelligence in Education*, Springer, 2023, pp. 497–503 (AR=21.1%)

37. A. Y. Wong, R. L. Bryck, R. S. Baker, **S. Hutt**, and C. Mills, "Using a webcam based eye-tracker to understand students' thought patterns and reading behaviors in neurodivergent classrooms," in *LAK23: 13th International Learning Analytics and Knowledge Conference*, 2023, pp. 453–463 (AR=32%)

38. J. M. A. L. Andres, **S. Hutt**, J. L. Ocumpaugh, and R. S. Baker, "Investigating how achievement goals influence student behavior in computer based learning," in *Proceedings of the 30th International Conference on Computers in Education*, 2022 (AR=26.7%)

39. **S. Hutt** and S. K. D'Mello, "Evaluating calibration-free webcam-based eye tracking for gaze-based user modeling," in *Proceedings of the 22nd ACM International Conference on Multimodal Interaction (ICMI 2022)*, New York, NY, USA: Association for Computing Machinery, 2022 (AR=15%)

40. M. He, R. S. Baker, **S. Hutt**, and J. Zhang, "A less overconservative method for reliability estimation for cohen's kappa," in *Proceedings of the 4th International Conference on Quantitative Ethnography*, In Press

41. R. S. Baker, **S. Hutt**, M. Mogessie, and H. Valayaputtar, "Research using the mooc replication framework and e-trials," in *2022 IEEE Learning With MOOCS (LWMOOCS)*, 2022

42. J. Zhang, J. M. A. L. Andres, **S. Hutt**, R. S. Baker, J. Ocumpaugh, C. Mills, J. Brooks, S. Sethuraman, and T. Young, "Detecting smart model cognitive operations in mathematical problem-solving process," in *Proceedings of the International Conference on Educational Data Mining*, 2022 (AR=28.9%) **- Nominated for Best Paper Award**

43. N. Levin, R. S. Baker, N. Nasiar, S. Fancsali, and **S. Hutt**, "Evaluating gaming detector model robustness over time," in *Proceedings of the International Conference on Educational Data Mining*, 2022 (AR=28.9%)

44. J. Zhang, **S. Hutt**, J. Ocumpaugh, N. Henderson, A. Golsen, J. Rowe, K. Boyer, E. Wiebe, B. Mott, and J. Lester, "Investigating student interest and engagement in game-based learning environments," in *Proceedings of the International Conference on Artificial Intelligence and Education*, 2022 (AR=20%)

45. **S. Hutt**, A. E. Stewart, J. Gregg, S. Mattingly, and S. K. D'Mello, "Feasibility of longitudinal eye-gaze tracking in the workplace," *Proc. ACM Hum.-Comput. Interact.*, vol. 6, no. ETRA, May 2022. DOI: 10.1145/3530889. [Online]. Available: https://doi.org/10.1145/3530889 (AR=38%)

46. J. M. A. L. Andres, **S. Hutt**, J. L. Ocumpaugh, R. S. Baker, N. Naisar, and C. Porter, "How anxiety affects affect: A quantitative ethnographic investigation using affect detectors and data-targeted interviews," in *Proceedings of the 3rd International Conference on Quantitative Ethnography*, 2021 (AR=56.5%)

47. J. L. Ocumpaugh, **S. Hutt**, J. M. A. L. Andres, R. S. Baker, G. Biswas, N. Bosch, L. Paquette, and A. Munshi, "Using qualitative data from targeted interviews to inform rapid aied development," in *Proceedings of the 29th International Conference on Computers in Education*, 2021 (AR=25.9%)

48. **S. Hutt**, J. Ocumpaugh, J. M. A. L. Andres, A. Munshi, N. Bosch, R. S. Baker, Y. Zhang, L. Paquette, S. Slater, and G. Biswas, "Who's stopping you? - using microanalysis to explore the impact of science anxiety on self-regulated learning operations," in *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*, 2021 (AR=32.4%)

49. **S. Hutt**, J. Ocumpaugh, J. M. A. L. Andres, N. Bosch, L. Paquette, G. Biswas, and R. S. Baker, "Sharpest tool in the shed: Investigating smart models of self-regulation and their impact on learning," in *Proceedings of the International Conference on Educational Data Mining*, 2021 (AR=22%)

50. Y. Zhou, J. Andres-Bray, **S. Hutt**, K. Ostrow, and R. S. Baker, "A comparison of hints vs. scaffolding in a mooc with adult learners," in *Proceedings of the International Conference on Artificial Intelligence and Education.*, 2021, pp. 427–432 (Short Paper)

51. R. S. Baker, B. McLaren, **S. Hutt**, J. Richey, E. Rowe, M. Almeda, M. Mogessie, and J. M. A. L. Andres, "Towards sharing student models across learning systems," in *Proceedings of the International Conference on Artificial Intelligence and Education.*, 2021, pp. 60–65 (Short Paper)

52. R. S. Baker, N. Nasiar, J. L. Ocumpaugh, **S. Hutt**, J. M. A. L. Andres, S. Slater, M. Schofield, A. Moore, L. Paquette, A. Munshi, and G. Biswas, "Affect-targeted interviews for understanding student frustration," in *Proceedings of the International Conference on Artificial Intelligence and Education.*, 2021, pp. 52–63 (AR=23.8%) **- Best Paper Award**

53. **S. Hutt**, K. Krasich, J. R. Brockmole, and S. K. D'Mello, "Breaking out of the lab: Mitigating mind wandering with gaze-based attention-aware technology in classrooms," CHI '21, Yokohama, Japan: Association for Computing Machinery, 2021, ISBN: 9781450380966. DOI: 10.1145/3411764.3445269 (AR=26%)

54. E. Jensen, T. Umada, N. C. Hunkins, **S. Hutt**, A. C. Huggins-Manley, and S. K. D'Mello, "What you do predicts how you do: Prospectively modeling student quiz performance using activity features in an online learning environment," in *LAK21: 11th International Learning Analytics and Knowledge Conference*, LAK21, Irvine, CA, USA: Association for Computing Machinery, 2021, pp. 121–131, ISBN: 9781450389358. DOI: 10.1145/3448139.3448151 (AR=32%) **- Nominated for Best Student Paper**

55. **S. Hutt**, M. Gardner, A. L. Duckworth, and S. K. D'Mello, "Evaluating fairness and generalizability in models predicting on-time graduation from college applications," in *Proceedings of the International Conference on Educational Data Mining*, C. F. Lynch, A. Merceron, M. Desmarais, and R. Nkambou, Eds., 2019, pp. 79–88 (AR=22.5%)

56. E. Jensen, **S. Hutt**, and S. K. D'Mello, "Generalizability of sensor-free affect detection models in a longitudinal dataset of tens of thousands of students," in *Proceedings of the International Conference on Educational Data Mining*, C. F. Lynch, A. Merceron, M. Desmarais, and R. Nkambou, Eds., 2019, pp. 324–329 (Short Paper)

57. **S. Hutt**, J. F. Grafsgaard, and S. K. D'Mello, "Time to scale: Generalizable affect detection for tens of thousands of students across an entire school year," in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, CHI '19, Glasgow, Scotland UK: ACM, 2019, 496:1–496:14, ISBN: 978-1-4503-5970-2. DOI: 10.1145/3290605.3300726 (AR=24%)

58. C. Stone, A. Quirk, M. Gardener, **S. Hutt**, A. L. Duckworth, and S. K. D'Mello, "Language as thought: Using natural language processing to model noncognitive traits that predict college success," in *Proceedings of the 9th International Conference on Learning Analytics & Knowledge*, LAK19, Tempe, AZ, USA: ACM, 2019, pp. 320–329, ISBN: 978-1-4503-6256-6. DOI: 10.1145/3303772.3303801 (AR=32%)

59. K. Krasich, **S. Hutt**, C. Mills, C. A. Spann, J. R. Brockmole, and S. K. D'Mello, "MindTS: Testing a brief mindfulness intervention with an intelligent tutoring system," in *Proceedings of the 19th International Conference on Artificial Intelligence in Education (AIED'18)*, London, UK, Jun. 2018 (AR=22.5%)

60. **S. Hutt**, M. Gardener, D. Kamentz, A. L. Duckworth, and S. K. D'Mello, "Prospectively predicting 4-year college graduation from student applications," in *Proceedings of the 8th International Conference on Learning Analytics and Knowledge*, LAK '18, Sydney, New South Wales, Australia: ACM, 2018, pp. 280–289, ISBN: 978-1-4503-6400-3. DOI: 10.1145/3170358.3170395 (AR=30%)

61. J. DeBenedetto, **S. Hutt**, L. Faust, A. Liu, and N. Kremer-Herman, "Placating plato with plates of pasta: An interactive tool for teaching the dining philosophers problem," in *2017 IEEE Frontiers in Education Conference (FIE)*, Oct. 2017, pp. 1–9. DOI: 10.1109/FIE.2017.8190443

62. **S. Hutt**, C. Mills, N. Bosch, K. Krasich, J. Brockmole, and S. D'Mello, "Out of the fr-eye-ing pan: Towards gaze-based models of attention during learning with technology in the classroom," in *Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization*, UMAP '17, Bratislava, Slovakia: ACM, 2017, pp. 94–103, ISBN: 978-1-4503-4635-1. DOI: 10.1145/3079628.3079669 (AR=36.2%) **- Best Student Paper Award**

63. **S. Hutt**, J. Hardey, R. Bixler, A. Stewart, E. Risko, and S. K. D'Mello, "Gaze-based detection of mind wandering during lecture viewing," in *Proceedings of the 10th International Conference on Educational Data Mining. International Educational Data Mining Society.*, 2017 (AR=42%)

64. **S. Hutt**, C. Mills, S. White, P. J. Donnelly, and S. K. D'Mello, "The Eyes Have It: Gaze-based Detection of Mind Wandering during Learning with an Intelligent Tutoring System.," in *Proceedings of the 9th International Conference on Educational Data Mining. International Educational Data Mining Society.*, T. Barnes, M. Chi, and M. Feng, Eds., 2016, pp. 86–93 (Exemplary Full Paper AR=15%)

BOOK CHAPTERS

65. J. Ocumpaugh, R. D. Roscoe, R. S. Baker, **S. Hutt**, and S. J. Aguilar, "Asset-based personalized learning," in *Handbook of Personalized Learning*, Routledge, 2025, pp. 437–450

66. **S. Hutt**, R. S. Baker, J. Ocumpaugh, A. Munshi, J. M. A. L. Andres, S. Karumbaiah, S. Slater, G. Biswas, L. Paquette, N. Bosch, and M. van Velsen, "Quick red fox: An app supporting a new paradigm in qualitative research on aied

for stem," in *Artificial Intelligence in STEM Education:The Paradigmatic Shifts in Research, Education and Technology*, CRC Pres, 2022, ISBN: 9781003181187

WORKSHOP PAPERS

67. **S. Hutt**, C. Mills, A. Hannum, and F. T. Liu, "Reimagining metacognitive scaffolding for programming in the age of generative ai," in *Aarhus '25*, New York, NY, USA: ACM, Aug. 2025
68. **S. Hutt**, S. Karumbaiah, and J. L. Ocumpaugh, "Optimizing philosophies for predictive models in learning analytics," in *LAK21: 11th International Learning Analytics and Knowledge Conference - Companion Proceedings*, LAK21, 2021, pp. 325–326

WORKSHOPS & PANELS FACILITATED

69. **S. Hutt**, "Leveraging generative ai to cultivate students' entrepreneurial mindset," in *American Society for Engineering Education Learning, 2025*, Online, 2025
70. **S. Hutt** and S. Rhodes, "Smart tech, smarter teaching. critical considerations for using ai in the classroom," in *International Society for Technology in Education Live, 2025*, San Antonio, TX, 2025
71. **S. Hutt**, "Harnessing generative ai: A collaborator in cultivating em?" In *Keen National Conference, 2025*, Austin, TX, 2025
72. A. Haim, **S. Hutt**, S. Shaw, and N. Heffernan, "Open science in educational data mining: A tutorial on licensing, data, and containers," in *Proceedings of the 17th International Conference on Educational Data Mining.*, Atlanta, GA, USA: Society for Educational Data Mining, 2024
73. A. Haim, **S. Hutt**, S. T. Shaw, and N. T. Heffernan, "Promoting open science in artificial intelligence: An interactive tutorial on licensing, data, and containers," in *International Conference on Artificial Intelligence in Education*, Springer, 2024, pp. 446–451
74. A. Stewart, C. Mills, and **S. Hutt**, "Marrying asset- and deficit-based approaches: A data feminist perspective in learning analytics," in *Proceedings of the 14th Learning Analytics and Knowledge Conference*, LAK '24, Kyoto, Japan,
75. S. D. Grady, **S. Hutt**, K. Badillo-Urquiola, G. O.-B. Osardu, A. E. Stewart, and E. Yafi, "Creating an equitable chi - what does it mean to be an ally?" In *Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems*, CHI EA '24, Association for Computing Machinery, 2024, ISBN: 9798400703317. DOI: 10.1145/3613905.3643976
76. **S. Hutt**, "Help or hindrance? generative ai, the classroom and, entrepreneurial mindset," in *Keen National Conference, 2024*, Austin, TX
77. A. Stewart, L. Lawrence, N. Lobczowski, and **S. Hutt**, "Knowing your abcs: Asset based communication for actionable learning interventions," in *The 20th Biennial EARLI Conference*, 2023

KEYNOTE PRESENTATIONS

78. **S. Hutt**, *From sci fi to syllabi: Considering the opportunities and challenges of ai in education*, Annual Faculty Symposium, Rose-Hulman Institute of Technology, Aug. 2024
79. **S. Hutt**, *From sci fi to syllabi: Considering the opportunities and challenges of ai in education*, AI Try-a-thon, University of Denver, Apr. 2024

Selected Conference Presentations

Conference Presentations with associated refereed proceedings articles are not cross listed.

80. A. Smith, **S. Hutt**, L. Acevedo-Farag, and M. Buschkuehl, "Inclusive research & development in mathematics: Boosting success for all learners," in *National Conference of Teachers of Mathematics (NCTM), 2025*, Atlanta, GA, Oct. 2025
81. R. Williams, T. Smith, **S. Hutt**, M. Brunner, and M. Tiu, *Innovative and iterative evaluation studies*, Society for Research on Educational Effectiveness, Oct. 2025
82. **S. Hutt** and G. Hieb, *Generating mastery: Developing a closed loop system to support mastery learning*, Society for Computation in Psychology, Nov. 2023
83. **S. Hutt**, J. L. Ocumpaugh, and N. Naisar, *How do you feel and why?: Integrating affective and motivational research with a 2-stage self-reporting tool*, Society for Computation in Psychology, Nov. 2023
84. **S. Hutt**, R. S. Baker, M. Mogessie, and H. Valayaputtar, *Tools for mooc data analysis and experimentation at the university of pennsylvania*, International Conference on Artificial Intelligence and Education, Durham, UK, Jul. 2022
85. J. R. Brockmole, K. Krasich, **S. Hutt**, and S. K. D'Mello, *Attention-aware cyberlearning to detect and combat wandering minds.* 59th Annual Meeting of the Psychonomic Society., New Orleans, LA, USA, Nov. 2018
86. A. Quirk, **S. Hutt**, M. Gardner, A. Duckworth, and S. K. D'Mello, *Analyzing open-ended descriptions of extracurricular participation for evidence of character development*, Promoting Character Development Among Diverse Children and Adolescents: The Roles of Families, Schools, and Out-Of-School-Time Youth Development Programs, Philadelphia, PA, USA., Oct. 2018
87. B. M. Galla, R. N. Baelen, H. Fiore, **S. Hutt**, and A. Shenhav, *Compared to self-immersion, mindfulness reduces social media desires and boosts academic self-control in undergraduates*, International Symposium for Contemplative Research (ISCR), Arizona, USA, Nov. 2018
88. K. Krasich, R. McManus, **S. Hutt**, M. Faber, S. K. D'Mello, and J. R. Brockmole, *Gaze-based indices of mind wandering during real-world scene processing.* Annual Workshop on Object Perception, Attention, and Memory., Vancouver, BC, Canada., Nov. 2017

Invited Presentations

89. **S. Hutt**, *Good vs. good enough: Using low-cost sensing for user modelling*, Society for Computation in Psychology - Presidential Symposium, Nov. 2022
90. J. L. Ocumpaugh, **S. Hutt**, A. Munshi, R. S. Baker, G. Biswas, and L. Paquette, *Quick red fox : Optimizing classroom interviews with srl and affect detection*, Learning Analytics Learning Network, Aug. 2021

Manuals and Reports

91. J. Ocumpaugh, L. Paquette, R. S. Baker, A. Barany, J. Ginger, N. Casano, A. F. Zambrano, X. Liu, Z. Wei, Y. Zhou, et al., "The quick red fox gets the best data driven classroom interviews: A manual for an interview app and its associated methodology," *arXiv preprint arXiv:2511.13466*, 2025

INTERNAL FUNDING

Internationalization Grant — 2023-2024
$2,400
University of Denver

Faculty Research Fund — 2022
$3,000
University of Denver

AWARDS

Best Paper Honorable Mention, L@S 2023 — July 2023
Best Paper Award, AIED 2021 — June 2021
Outstanding Service Award, Department of Computer Science — May 2019
Outstanding Service Award, Department of Computer Science — May 2018
James Chen Best Student Paper Award, UMAP 2017 — July 2017
SIGCHI Student Scholar — March 2017
Outstanding Student Award — July 2011

PERSONAL FUNDING

Gary Marsden Travel Award — June 2022
$1,600
SIGCHI

Department of Computer Science Student Travel Award — May 2019
$1,600
University of Colorado Boulder

Department of Computer Science Student Travel Award — March 2018
$1,000
University of Colorado Boulder

College of Engineering Student Travel Award — March 2018
$400
College of Engineering and Applied Sciences,University of Colorado Boulder

Dean's Graduate Assistantship, CU Boulder — August 2017
$21,800
College of Engineering and Applied Sciences,University of Colorado Boulder

SIGCHI Student Travel Grant — August 2016
$1,800
SIGCHI

Social Responsibilities of Research Fellowship — May 2016
$1,500
John J. Reilly Center for Science, Technology, and Values

Student Travel Scholarship — April 2011
$4,500 (paid in GBP)
University of York

RESEARCH EXPERIENCE

Assistant Professor — August 2025 - Present
Department of Educational Psychology
University of Minnesota

I lead a research group centered on Education-Focused Artificial Intelligence, investigating how AI can both enhance and deepen our understanding of learning. Our work is grounded in theory-driven educational research, drawing on learning sciences frameworks to guide AI discoveries and applications. I collaborate with colleagues

across Computer Science, Learning Sciences, Psychology, and Cognitive Science to advance educational technologies informed by rigorous research.

Assistant Professor September 2022 - August 2025
Department of Computer Science
University of Denver

I lead a small research team investigating Human Centered AI, with a focus on educational applications and educational technologies. I work with a number of external collaborators, spanning the fields of Computer Science, Learning Sciences, Psychology, and Cognitive Science.

Assistant Director August 2021 - August 2022
Penn Center for Learning Analytics
University of Pennsylvania

I held leadership role within the center, mentoring and supporting students while also maintaining my own research. I provide guidance and feedback to both PhD and Masters students affiliated with the Center. I also support the broader research goals of the center and center funding proposals. I worked closely with the devlopment team for the MOOC Replication Framework (MORF) - a data repository and analysis framework - and assist external researchers wishing to leverage MORF for their work.

Postdoctoral Researcher August 2020 - August 2022
Graduate School of Education,
University of Pennsylvania
Supervisor: Ryan Baker, Ph.D

Conducted research at the intersection of Artificial Intelligence and Education. Used Computer Science knowledge and techniques to create educational software and experiences that are both dynamic and beneficial for the learner. This research had a special focus on the fair treatment of students who are members of underrepresented groups.

PhD Researcher January 2018 - August 2020
Institute of Cognitive Science,
University of Colorado, Boulder
Supervisor: Sidney D'Mello, Ph.D

Explored how artificial intelligence and big data techniques can apply in education. Researched Fair AI in the context of educational software and worked with two large-scale datasets to explore how current methods commonly used in education contexts scale up. Designed and implemented real-time gaze-based Mind Wandering detection and interventions.

PhD Researcher September 2015 to August 2017
Department of Computer Science,
University of Notre Dame
Supervisor: Sidney D'Mello, Ph.D

Designed and implemented a multimodal experiment on detecting affect and engagement during classroom learning. Collected eye gaze, video, and interaction data from students whilst they interacted with a Biology Intelligent Tutoring System. Built machine learning models of mind wandering using eye gaze data of students interacting with computers in multiple tasks.

Masters Researcher September 2014 to July 2015
Department of Computer Science,
University of York

Supervisor: Dan Franks, Ph.D

Designed and implemented a framework to train agents to play Texas Hold'em poker. Using genetic algorithms and evolutionary computation approaches, I trained multiple agents playing against each other as well as expert and pre-trained agents.

TEACHING EXPERIENCE

Assistant Professor, University of Minnesota Fall '25 - Present

Programming Fundamentals for Social Science Research
Department of Computer Science,
University of Minnesota
Graduate

Designed and implemented a interactive class that introduces programming and computational thinking to social science graduate students. Students learn Python programming, data analysis, and visualization techniques through hands-on projects and assignments relevant to social science research. Class is taught using flipped classroom approacha nd active learning techniques.

Assistant Professor, University of Denver Fall '22 - Spring '25

Introduction to Artificial Intelligence
Department of Computer Science,
University of Denver
Undergraduate and Graduate

Designed and implemented a broad survey class, considering a range of Artificial techniques, and how they relate to current socio-political discussions. Students engage in regular discussion and debate, as well as programming assignments and building theoretical foundations.

Introduction to Programming I
Department of Computer Science,
University of Denver
Undergraduate

Designed and implemented (in collaboration with colleagues) the introductory course for Computer Science major and minors. Work with students from across campus to build their proficiency in programming and Computer Science topics more broadly.

Advanced Topics In Artificial Intelligence
Department of Computer Science,
University of Denver
Graduate Class (Advanced Undergraduates enrolled by instructor permission)

Lead students in advanced discussion of the applications of Artificial Intelligence, including ethics and human impacts.

Introduction to Computer Science
Department of Computer Science,
University of Denver
Undergraduate

Lead a introductory course that introduces to the fundamentals of problem solving, Computer Science as a broad field, and ethics in Computer Science and Data Science

Instructor Spring '19

Introduction to Artificial Intelligence
Department of Computer Science,
University of Colorado Boulder

Designed and implemented the curriculum, assignments and examinations. Held weekly classes, managed course staff of four people, and mentored students during office hours. 106 students enrolled

Teaching Assistant Fall '17
Introduction to Computer Science
Instructor: David Knox, Ph.D
Department of Computer Science,
University of Colorado Boulder

Taught two lab sections with approximately 30 students each, prepared weekly assignments and autograders, assisted with the devlopment of examinations, and mentored students during office hours.

Teaching Assistant Fall '15
Design and Analysis of Algorithms
Instructor: Danny Z. Chen, Ph.D
Department of Computer Science,
University of Notre Dame

Assisted with the development of written assignments and examinations. Mentored students during weekly office hours and review sessions. 94 students enrolled

PROFESSIONAL MEMBERSHIP
Association for Computing Machinery
International Educational Data Mining Society
International Artificial Intelligence in Education Society
Cognitive Science Society
Society for Learning Analytics Research
ACM Special Interest Group on Computer-Human Interaction (SIGCHI)
ACM Special Interest Group on Computer Science Education (SIGCSE)

JOURNAL REVIEWS
Plos One
Psychology Bulletin
Educational Psychology Review
Learning and Individual Differences
Journal of Educational Psychology
British Journal of Educational Technology
Journal of Educational Data Mining
Journal of Learning Analytics
Frontiers in Artificial Intelligence
International Journal of Artificial Intelligence in Education
Computers in Human Behaviour
Advances in Methods and Practices in Psychological Science
Journal of Research on Educational Effectiveness
Review of Research in Education
IEEE Transactions on Visualization and Computer Graphics
Consciousness and Cognition
IEEE Transactions on Learning Technologies
IEEE Transactions on Big Data

CONFERENCE REVIEWS
Learning Analytics and Knowledge (LAK), 2022, 2024, 2025
American Education Research Association (AERA), 2023, 2024, 2025
ACM Symposium on Eye Tracking Research and Applications (ETRA), 2022
International Conference on Educational Data Mining (EDM) 2017 - 2025

International Conference on Artificial Intelligence in Education (AIED), 2017-2025
International Conference on Multimodal Interaction (ICMI) 2019, 2020, 2024
ACM Conference on Computer-Supported Cooperative Work and Social Computing 2019
ACM CHI Conference on Human Factors in Computing Systems 2019-2022

DISSERTATION COMMITTEES

Hendrik Steinbeck — Fall 2025
University of Potsdam

Ali Pourramezan Fard — Spring 2024
Department of Computer Science, University of Denver

Juan Miguel Andres-Bray — Fall 2021
Graduate School of Education, University of Pennsylvania

MASTERS COMMITTEES

Naheem Noah — Spring 2024
Department of Computer Science, University of Denver

Ryan Dunagan — Spring 2023
Department of Computer Science, University of Denver

OTHER DEGREE MILESTONE COMMITTEES

Yewon Kang — Fall 2025
Doctoral Prelim Oral Exam, Department of Educational Pyschology, University of Minnesota

ADVISEES

PhD. Students

Christopher Steadman	2025 - Present
Demi Jaiyeola	2023 - 2025
Yajing Li	2024 - 2025

Masters Students

Kiera Rosenberg	2025 - Present
Damilare Olaniyan	2023 - 2025
Aaron Martin	2023 - 2025
Karlan Schneider	2023 - 2025
Sean Perman	2023 - 2025
Peter Stamm	2023 - 2025
Juan Malaver Alvarado	2023 - 2024

MENTORSHIP

PhD. Students

Luan Chau	2025 - Present
Juan Miguel Andres-Bray	2020 - 2022
J. M. Alexandra Andres	2020 - 2024
Joyce Zhang	2020 - Present

Masters Students

Alexander White	2020 - 2021
Yiqiu Zhou	2020 - 2021
Tetsumichi Umada	2019 - 2020

Phu Dang	2018
Sayali Sonawane	2018

Undergraduate Students

Annabella Brotherston	2023 - 2025
Hector Rodriguez	2023 - 2025
Grayson Hieb	2023 - 2025
Daniel Kanaracus	2024
Karthik Turimella	2024
Dan Laskarzewski	2023
Ray Zhang	2021 - 2022
Alexander Tobias	2021
Frank Stinar	2019 - 2020
David Blair	2017 - 2019
Kendyll Kraus	2017
Jessica Hardey	2016 - 2017

High School Students

Jace Enriquez	2024
Jack Rogers	2019
Connor Malley	2019
Taylor Kovacs	2016-2017

ACADEMIC SERVICE

Broader Research Community

Senior Program Committee, Learning Analytics and Knowledge 2026
Editorial Board Member, Journal of Educational Data Mining 2025 - Present
Workshops Co-Chair, Educational Data Mining 2025
Senior Program Committee, Learning Analytics and Knowledge 2025
Associate Chair, ACM CHI Conference on Human Factors in Computing Systems 2024
Allyship Chair, ACM CHI Conference on Human Factors in Computing Systems 2024
Program Committee, International Conference of the Learning Sciences 2023, 2025, 2026
Program Committee, Learning Analytics and Knowledge 2023, 2024
Hybrid Experience Chair, Educational Data Mining 2022
Program Committee, International Conference on Multimodal Interaction 2022
Program Committee, ACM Symposium on Eye Tracking Research and Applications 2022
Program Committee, Educational Data Mining 2022
Program Committee, Artificial Intelligence in Education 2022
Program Committee, International Conference on Multimodal Interaction 2021
Program Committee, Artificial Intelligence in Education 2021
Program Committee, International Conference on Multimodal Interaction 2020
Program Committee, Artificial Intelligence in Education 2020
Program Committee, Educational Data Mining 2020
Local Committee, International Conference on Multimodal Interaction 2018
Program Committee, Educational Data Mining 2017

Department and Institution Level

Graduate Advisory Committee, 2026

Research Committee, 2025
Churchill Scholars Review Committee, 2024
Led lunch and Learn on Generative AI, University of Denver, 2024
AI Try-a-thon organiasation, University of Denver, 2024
Computer Science Search Committee, University of Denver, 2023/2024
Computer Science Graduate Advising Committee, University of Denver, 2023/2024
Presented at Board of Trustees, University of Denver, 2023
Justice, Equity, Diversity and Inclusion Committee, University of Denver, 2022 - Present
Computer Science Search Committee, University of Denver, 2022/2023
Student Lead, CS Orientation, CU Boulder, 2019
Student Lead, CS Open House, CU Boulder, 2019
Graduate Committee, Department of Computer Science, CU Boulder, 2017-2019
Chair, Computer Science Graduate Student Association, CU Boulder, 2018, 2019
Committee to review graduate degree requirements, Department of Computer Science, CU Boulder 2018
Founder Member, Computer Science Graduate Student Association, CU Boulder, 2018
Judge, N. Indiana Regional Science and Engineering Fair 2016

Community Service

Panelist, Minnesota School Board Association, 2026
Consultant on AI Decision Making, Denver Public Schools, 2023 - Present
Led Workshops on the intersection of DEI and Technology Usage 2023 - Present, School Districts Anonymised due to changing legislation.
Consultant on AI Decision Making, School District of Philadelphia, 2022

Broader Community Service (Non Field Related)

Consultant, The Center on Colfax, 2025
Board of Directors, Rocky Mountain Arts Association, 2021 - Present
Board Treasurer, Rocky Mountain Arts Association, 2021 - Present