

Daniel Ritchie

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School of Education

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Researcher, developer, and educator creating responsible AI applications to promote equitable learning outcomes. Experienced in designing and deploying LLM-powered tools, leading cross-sector partnerships with schools and nonprofits, and mentoring emerging AI practitioners. Committed to leveraging AI for public impact.

EXPERTISE

Areas AI literacy; interdisciplinary AI; interactive technologies; data literacy; computer science education; human-computer interaction; applications of AI in education

Methods Mixed methods; design-based implementation research; natural language processing; qualitative methods; experimental design; learning analytics

EDUCATION

2026 Ph.D. in Education (specialization: Digital Media)
(Expected) University of California, Irvine
National Science Foundation Graduate Research Fellow, 2023-2026

2024 M.A. in Education
University of California, Irvine

2021 B.S. in Computer Science, Minor in Education
University of California, Davis

RESEARCH EXPERIENCE

2023–Present Researcher, User Experience & Development. *Generative AI in Education*, UCI School of Education. PIs: Dr. Tamara Tate, Dr. Mark Warschauer

- Co-designed and iterated an **AI-powered classroom tutor application** used by 1,000+ middle school and undergraduate students across 40+ classrooms.
- Managed development team to translate research insights into **new features, design changes, and support materials**, ensuring real-world usability.
- Led mixed-method evaluations (interviews, observations, NLP-based analysis, discourse analysis) to **improve educational effectiveness and adoption**.

2021–2023 Project Lead. *CodeAI*, UCI School of Education.

- Led a small team to design and build **curriculum and digital tools for AI/data literacy**,

deployed in schools and community programs.

- Managed **multi-stakeholder partnerships** across universities, school districts, and nonprofits.
- **Piloted prototypes** with 60+ middle school students in both in-school STEM electives and after-school programs.

2021–2023 **Researcher, Quantitative.** *Converse to Learn*, UCI School of Education. PIs: Dr. Mark Warschauer, Dr. Ying Xu

- Studied the effectiveness of an **AI-powered conversational agent** embedded in children's media.
- Helped **refine agent design** by analyzing attention and learning outcomes in 200+ children (ages 3–7) through pre-/post-tests and automated video analysis.

2022 **Researcher, Quantitative.** *Capturing Online Instructor Practices Using Learning Management System Data*, UCI School of Education. PI: Dr. Di Xu

- Developed and tested metrics to model instructor behavior within learning management systems.
- Applied Python and SQL pipelines to clean, process, and analyze large-scale LMS datasets.

2021–2022 **Researcher, Mixed Methods.** *Scalable AI to Support Reading Comprehension*, UCI School of Education, IBM Research, University of Notre Dame. PI: Dr. Ying Xu

- Built a dataset of 10,000+ QA pairs from children's stories to train NLP models.
- Evaluated an **AI-driven storytelling chatbot**, conducting experiments with parent-child dyads.

CO-AUTHORED GRANTS

Deploying an Argumentative Essay Feedback Algorithm with Middle School Teachers and Students. *The Learning Agency Lab*

October 2024 - May 2025 | Mark Warschauer (PI), Tamara Tate (Co-PI)

PapyrusAI: An Intelligent Writing Coach for K-12 Schools. *UCI Beall Applied Innovation*

January 2024 - June 2024 | Mark Warschauer (PI), Tamara Tate (Co-PI)

JOURNAL ARTICLES

Tate, T. P., Harnick-Shapiro, B., **Ritchie, D.**, Tseng, W., Dennin, M., & Warschauer, M. (2025). Incorporating generative AI into a writing-intensive undergraduate course without off-loading learning. *Discover Computing*, 28, Article 72. <https://doi.org/10.1007/s10791-025-09563-9>

Tate, T. P., Steiss, J., Bailey, D., Graham, S., Moon, Y., **Ritchie, D.**, Tseng, W., & Warschauer, M. (2024). Can AI provide useful holistic essay scoring? *Computers and Education: Artificial Intelligence*, 7, Article 100255. <https://doi.org/10.1016/j.caeai.2024.100255>

Xu, Y., He, K., Levine, J., **Ritchie, D.**, Pan, Z., Bustamante, A., & Warschauer, M. (2024). Artificial intelligence enhances children's science learning from television shows. *Journal of Educational Psychology*, 116(7), 1071–1092. <https://doi.org/10.1037/edu0000889>

Ojeda-Ramirez, S., **Ritchie, D.**, & Warschauer, M. (2024). AI Literacy for Multilingual Learners: Storytelling, Role-playing, and Programming. *The CATESOL Journal*, 35(1). <https://doi.org/10.5070/B5.35861>

Ritchie, D. (2020). Review of existing video games for computer science education. *Prized Writing*, 31, 187-197.

REFEREED CONFERENCE PROCEEDINGS

Ritchie, D., Tate, T., Zhang, Y., Werry, K., & Warschauer, M. (2025). Supporting middle school English teachers' AI literacy goals through a generative AI tutor. In Cristea, A.I., Walker, E., Lu, Y., Santos, O.C., Isotani, S. (Eds.), *Proceedings of the 26th International Conference on Artificial Intelligence in Education (AIED 2025) Part VI* (pp. 283–290). Springer. https://doi.org/10.1007/978-3-031-98465-5_36

Tate, T., Doroudi, S., **Ritchie, D.**, Xu, Y., & Warschauer, M. (2023). Educational research and AI-generated writing: Confronting the coming tsunami. EdArXiv. January, 10. https://www.writecenter.org/uploads/1/2/5/6/125695261/educational_research_and_ai-generated_writing_tate_et_al_2023_2_.pdf

Xu, Y., Wang, D., Yu, M., **Ritchie, D.**, Yao, B., Wu, T., Zhang, Z., Li, T., Bradford, N., Sun, B., Hoang, T., Sang, Y., Hou, Y., Ma, X., Yang, D., Peng, N., Yu, Z., & Warschauer, M. (2022). Fantastic questions and where to find them: FairytaleQA— An authentic dataset for narrative comprehension. In S. Muresan, P. Nakov, & A. Villavicencio (Eds.), *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics* (pp. 447–460). Association for Computational Linguistics. <https://doi.org/10.18653/v1/2022.acl-long.34> [Equal Contributing 1st Author].

Zhang, Z., Xu, Y., Wang Y., Yao, B., **Ritchie, D.**, Wu, T., Yu, M., Wang, D., & Li, T. (2022). Storybuddy: A human-AI collaborative agent for parent-child interactive storytelling. In S. Barbosa, C. Lampe, C. Appert, D. A. Shamma, S. Drucker, J. Williamson, & K. Yatani (Eds.), *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (Article 218). Association for Computing Machinery. <https://doi.org/10.1145/3491102.3517479>

CONFERENCE PRESENTATIONS

Humburg, M., Han, A., Zhang, Y., Melo, N. A., Higgs, J., Relmasira, S. C., Keune, A., **Ritchie, D.**, Jackson, D. W., Huang, J., Han, S., Corrigan, S., Pepler, K., Smyslova, D., Li, Q., Zheng, J., Rosé, C. P., Chao, J., Jiang, S., Chávez, V. C., Kaimana, M., Isero, M., Donaldson, J. P., Hurtado, S., Saito-Stehberger, D., Tate, T., Warschauer, M., Scheuneman, S. M., McCune, D. L., Ramdath, K., Goehrig, F., Nwogu, I., Waight, N., & McBride, C. (2025, June). *Humanizing AI for education: Conversations with the JLS 2026 special issue contributors*. Forthcoming presentation at the 2025 International Society of the Learning Sciences (ISLS) Annual Meeting, Helsinki, Finland.

Ritchie, D. (2024, April). From Language to Algorithms: Integrating AI Literacy in Middle School English and STEM Curricula. *University of Tübingen LEAD Retreat*. Bad Boll, Germany.

Warschauer, M., **Ritchie, D.**, Daviss, M., Gonzalez, I., Zavala, J. (2024, March). Promoting AI literacy - A university-school partnership. *California Charter School Association Annual Conference*. Long Beach, California.

Xu, Y., Levine, J., Vigil, V., **Ritchie, D.**, Zhang, S., Thomas, T., Barrera, C., Meza, M., Bustamante, A. S., Warschauer, M. (2023). Interaction With a Television Character Powered by Artificial Intelligence Promotes Children's Science Learning. *Annual Meeting of the American Educational Research Association*.

Zhang, S., Vigil, V., **Ritchie, D.**, Levine, J., Xu, Y. (2023). Interacting with a Conversational Agent Promotes Children's Science Learning. *Annual Meeting of the Society for Research in Child Development*.

INVITED PRESENTATIONS

Warschauer, M., **Ritchie, D.**, (2024, March). Promoting AI literacy. *AI K12 Deeper Learning Summit*. Anaheim, California.

Warschauer, M., **Ritchie, D.**, (2023, October). Preparing our students with AI literacy [Keynote address]. *Ceibal National Conference on AI in Education*. Montevideo, Uruguay.

Warschauer, M., **Ritchie, D.** (2023, August). Promoting AI Literacy. *LA County Office of Education AI Symposium*. Los Angeles, California.

Warschauer, M., Tseng, W., Du, Q., **Ritchie, D.** (2023, March). *ChatGPT and Generative AI in Community Colleges* [invited presentation]. California Outcomes Assessment Coordinator Hub, Student Learning Outcomes series.

Warschauer, M., Tate, T., Doroudi, S., Du, Q., **Ritchie, D.** (2023, January). *ChatGPT, Generative AI, and the Future of Education* [invited presentation]. UCI Digital Learning Lab, Irvine, CA.

Vigil, V., **Ritchie, D.** (2022, April). *Converse to Learn: AI in Children's Media* [guest lecture]. UCI Education 30: 21st Century Literacies, Irvine, CA.

TEACHING & MENTORSHIP EXPERIENCE

2023–2025 *Guest Lecturer, Ethics in Learning Analytics.* Education 180: Special Topics in Education - Learning Analytics. UC Irvine.

- Delivered guest lectures on ethics in learning analytics, guiding students in understanding responsible data use and algorithmic fairness.

2023–2024 *Learning Assistant.* University Studies 3: AI in Education First Year Seminar. UC Irvine.

- Supported instruction in a first-year seminar on AI in Education, helping undergraduates critically examine and apply generative AI tools.

2023–2024 *Graduate Student Mentor.* Career Pathways: Learning Engineering and Data Science (CP-LEADS). UC Irvine.

- Mentored graduate students in applying AI and data science to education research, supporting professional development and technical skill-building.

2021–2025 *Instructor.* Personal Website and HTML/CSS Programming Workshop for Education Researchers. UC Irvine.

- Designed and taught hands-on programming workshops to equip education researchers with foundational coding and web development skills for data visualization and dissemination.

LEADERSHIP & SERVICE

2023–Present *Chair.* [AIforCA](#), a project of CSforCA.

- Lead statewide initiative advancing **AI literacy and equitable computer science education** for California schools.
- Coordinate with educators, policymakers, and researchers to **develop resources, shape policy recommendations, and host public workshops** on responsible AI education.

2023–Present *Member.* *Generative AI Advisory Board Committee*, Office of the Vice Provost for Teaching and Learning.

- Advise university leadership on **responsible adoption of generative AI in teaching and learning**.
- Provide guidance on **equity, ethics, and capacity-building** for instructors integrating AI

tools into curricula.

2022–2025 ***Volunteer Instructor.*** *Delhi Center Summer STEAM Camp*, Santa Ana, CA.

- Taught computer science, programming, engineering, and artificial intelligence to underprivileged and low-income students aged 5 to 13.

Reviewer: ACM CHI Conference on Human Factors in Computing, The Symposium on Educational Advances in Artificial Intelligence, Cambridge Elements: Generative AI in Education.