FULWIDER

G. CURT

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U.S. 5 Sep 1989

I am a Data & Learning scientist who builds interactive, data-driven systems for assessment, motivation, and student growth. My work sits at the intersection of game-based learning, behavioral telemetry, and AI-informed modeling to explore and create usable tools for students and educators.

EDUCATION

Ph.D. Instructional Systems and Learning Tech. 2026
Florida State University | *Tallahassee, FL*
(Advisors: Dr. Bret Staudt-Willet)

M.S. Edu. Measurement and Statistics 2022-2023
Florida State University | *Tallahassee, FL*
(Advisor: Dr. Russell Almond)

M.S. Instructional Systems and Learning Tech. 2016-2018
Florida State University | *Tallahassee, FL*
(Advisor: Dr. James Klein)

B.A. in English Education 2008-2012
Washburn University | *Topeka, KS*
(Magna Cum Laude)

RESEARCH

AREAS

- Game-Based Assessment and Stealth Assessment
- Educational Data Mining and Learning Analytics
- Self-Efficacy and Non-Cognitive Measurement
- AI-Enhanced Learning Systems
- Motivation in Interactive Learning
- Information Literacy and Critical Thinking

EXPERIENCE

CHIEF DATA SCIENTIST **2023-2025**

Assessing Non-cognitive Constructs | *Censio Analytics*

(Targeting constructs related to dropping out of college.)

- Designed Bayesian network assessment models to infer non-cognitive constructs from gameplay behavior and telemetry
- Designed data pipelines for behavioral logs (Unity to SQL), feature engineering, and model calibration
- Applied machine learning (Naive Bayes, logistic regression) to evaluate predictive validity and guide model revisions
- Led evidence-centered design and assessment specifications with product and research teams

GRADUATE RESEARCH ASSISTANT **Summer 2023**

Broadening Participation of Next Gen....Engineers | *Florida State Uni.*

(Advisor: Dr. Jeannine Turner)

- Supported external program evaluation of a workshop for HBCU aerospace engineering students
- Built Qualtrics instruments and data collection workflows
- Cleaned, merged, and analyzed survey data and produced summary reports

GRADUATE RESEARCH ASSISTANT **2020-2022**

Physics Playground | *Florida State University*

(Advisor: Dr. Valerie Shute)

- Designed data pipelines for gameplay logs and survey data, including cleaning and integration
- Implemented feature engineering to extract fine-grained behavioral indicators from gameplay telemetry
- Delivered analysis-ready datasets and custom variables for learning analytics studies
- Institute of Education Sciences award no. R305A170376

GRADUATE RESEARCH ASSISTANT **2017-2018**

Project A+ | *Florida State University*

(Advisor: Dr. Amelia Anderson)

- Supported data collection and transcription for mixed-methods study
- Developed instructional materials to help librarians better assist individuals with ASD

TECHNICAL SKILLS

Programming	Unity (C#), Python, SQL, JSON, R
Data	Bayesian modeling, machine learning, feature engineering, learning analytics
Systems	Telemetry pipelines, assessment data workflows, web hosting
Tools	Qualtrics, Power BI, Git, Trello, Slack, MPLUS, SPSS, Canvas, and more.
Methods	Evidence-Centered Design, measurement and validation, exploratory data analysis, A/B testing, and more.

PROJECTS

MEAN ALCHEMY — Active

Game-based assessment and learning system

- Designing a game-based learning environment that captures behavioral telemetry to model self-efficacy and mastery with Bayesian networks
- Built Unity (C#) front end with Supabase/SQL backend and analytics pipeline for rapid iteration

LEARNING ANALYTICS DASHBOARDS AND TOOLS — Active

Center for Health Advocacy & Wellness (CHAW), Florida State University

(Public reporting dashboard of campus health trends; improving internal assessment and survey instruments)

- Built and maintained dashboard and reporting workflows for public-facing campus health trend reporting
- Improved internal assessment instruments and survey workflows for healthier and more reliable data collection

PHYSICS PLAYGROUND ANALYTICS — 2020-2022

Learning analytics and gameplay telemetry

- Built ETL and feature engineering processes for fine-grained gameplay data and survey integration
- Delivered analysis-ready datasets used in multiple publications and presentations

PUBLICATIONS

Articles

Liu, Z., & **Fulwider, G.C.** (2025). Modeling hidden states in learning: A hidden markov model approach to stealth assessment for problem solving in computational thinking. *Journal of Research on Technology in Education*, *58*(1), 32–52. https://doi.org/10.1080/15391523.2025.2586536

Na, H., Caskurlu, S., **Fulwider, G.C.**, & Jun, B.-W. (2025). Solo or pair programming for k-12 students? learning outcomes and in-game behaviors in a game-based learning environment. *TechTrends*, *70*(1), 200–225. https://doi.org/10.1007/s11528-025-01142-5

Fulwider, G.C., Kim, C., & Sprenkle, S. (2024). Unveiling the measurement of self-efficacy in game-based learning. *The Journal of Applied Instructional Design*.

Rahimi, S., Shute, V. J., **Fulwider, G.C.**, Bainbridge, K., Kuba, R., Yang, X., Smith, G., Baker, R. S., & D'Mello, S. K. (2022). Timing of learning supports in educational games can impact students' outcomes. *Computers & Education*, *190*, 104600. https://doi.org/10.1016/j.compedu.2022.104600

Smith, G., **Fulwider, G.C.**, Liu, Z., Lu, X., Shute, V. J., & Li, J. (2022). Examining students' perceived competence, gender, and ethnicity in a digital STEM learning game. *International Journal of Game-Based Learning*, *12*(1), 1–17. https://doi.org/10.4018/ijgbl.294013

Yang, X., Rahimi, S., **Fulwider, G.C.**, Smith, G., & Shute, V. (2022). Exploring students' behavioral patterns when playing educational games with learning supports at different timings. *Educational Technology Research and Development*, *70*(4), 1441–1471. https://doi.org/10.1007/s11423-022-10125-9

Chapters

Liu, Z., & **Fulwider, G.C.** (2023). Balancing granularity and context in designing evidence models for stealth assessment. In *Games as stealth assessments* (pp. 101–124). IGI Global. https://doi.org/10.4018/979-8-3693-0568-3.ch005

Shute, V. J., **Fulwider, G.C.**, Liu, Z., & Rahimi, S. (2023). Machine learning. In *International encyclopedia of education* (4th, pp. 83–91). Elsevier. https://doi.org/10.1016/b978-0-12-818630-5.14013-8

Conferences

Fulwider, G.C. & Song, W. (2024). Advancing self-efficacy scale design: Integrating ai and human expertise in language learning assessments [Poster Presentation]. *2025 Eastern Educational Research Association*.

Fulwider, G.C., Song, W., Na, H., & Turner, J. (2024). Empowering educators: Large language models in the creation of language learning self-efficacy scales.

Na, H., **Fulwider, G.C.**, Caskurlu, S., & Jun, B.-W. (2024). Solo vs. collaborative programming? cognitive and affective outcomes, problem design and solving patterns in a game-based learning environment. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024*, 2375–2376. https://doi.org/10.22318/icls2024.107184

Fulwider, G.C., Liu, Z., Smith, G. L., & Shute, V. J. (2023). Tackling wheel-spinning: The complex task of measuring persistence in learning games [Poster Presentation]. *2023 American Educational Research Association*.

Kim, C., Sprenkle, S., & **Fulwider, G.C.** (2023). Unveiling the measurement of self-efficacy in game-based learning [Poster Presentation]. *2023 Association for Educational Communications and Technology*.

Rahimi, S., **Fulwider, G.C.**, Jiang, S., & Shute, V. J. (2022). Predicting learning gains in an educational game using feature engineering and machine learning. *Proceedings of the 16th International Conference of the Learning Sciences*, 2124–2125. https://repository.isls.org//handle/1/8747

Fulwider, G.C., Liu, Z., & Smith, G. L. (2021). A new age for non-cognitives: Measuring persistence in game-based learning using bayesian exploratory factor analysis [Poster Presentation]. *2021 American Educational Research Association Annual Meeting*.

IN PROGRESS

Manuscripts

- Dissertation: Game-based assessment and self-efficacy modeling in interactive learning environments
- LLM-Generated Self-Efficacy Scales: Validity evidence for ChatGPT-generated instruments
- Heritage Language Learners on Reddit: A mixed-methods analysis of community discourse

TEACHING

ADJUNCT INSTRUCTOR — **Fall 2025-Present**

Tallahassee State College | *Tallahassee, FL*

- STA2023 Introductory Statistics, fully online and asynchronous
- Delivered multiple simultaneous sections and managed high-volume student communication
- Overhauled the course page and structure; leading ongoing accessibility improvements

GRADUATE ASSISTANT IN TEACHING — **2020-2025**

Continuous | *Florida State Uni.*

(Courses I have TA'ed for during this time)

- Basic and Descriptive Statistics
- Advanced Topics in Analysis of Variance Applications
- Inquiry and Measurement for Practitioners
- Theories of Learning and Cognition in Instruction

INSTRUCTOR — **2013-2015**

English Conversation, Writing, and Cultural Studies | *Zhejiang Normal Uni., Jinhua, Zhejiang, China*

- I designed, developed, and taught multiple courses for undergraduate students on English and Western culture.
- Sat on multiple panels as a judge for English competitions
- Presented on instructional methods for local instructors in the region

SERVICE

UNIVERSITY

- Treasurer for Florida State University Instructional Systems Students Association (2017)
- Guest Lecturer for Learning Analytics Course at Teachers College, Columbia University

REVIEWING

- Florida Educational Research Association
- International Conference for the Learning Sciences
- National Council on Measurement in Education
- Association for Educational Communications and Technology

AWARDS

- Finalist for Excellent Performance in the ISLT Masters Program Award, Florida State University (2018)
- Ruby Diamond Future Professor Award, Florida State University (2021)

REFERENCES

K. Bret Staudt Willet, Ph.D.
Assistant Professor
Instructional Systems & Learning Technologies
Department of Educational Psychology & Learning Systems
Anne Spencer Daves College of Education, Health, and Human Sciences
Florida State University
bret.staudtwillet@fsu.edu

Valerie J. Shute, Ph.D.
Professor Emerita (Retired)
Instructional Systems & Learning Technologies
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