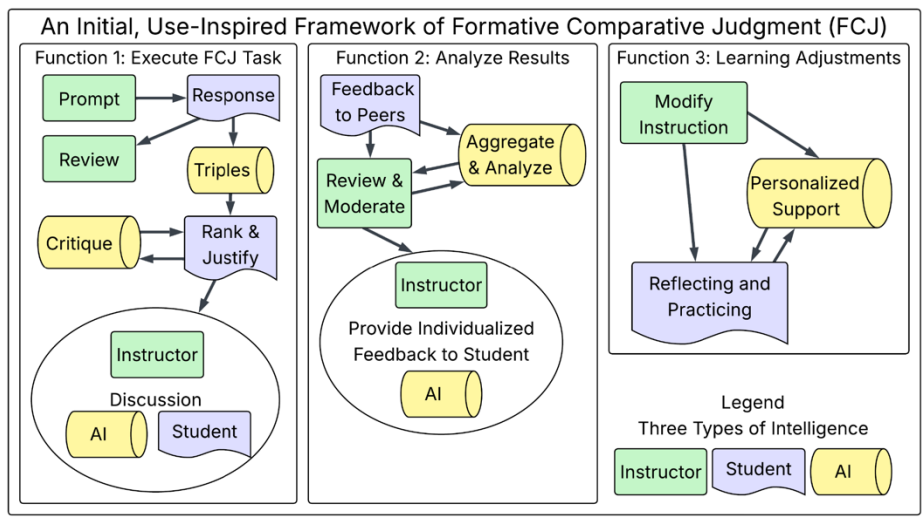


AI-support for teaching and learning at scale

- "write-to-learn" tasks improve learning outcomes, yet constructed-response methods become unwieldy when class sizes are large
- Develop LLM and AI-based tools intended to amplify instructor efforts to provide timely, personalized feedback
- Build trust and confidence that human-AI partnerships make a responsible contribution



Related Papers & Acknowledgement:

Beckman, Burke, Fiochetta, Fry, Susan Lloyd, Patterson, Elle Tang (in review). Developing Consistency Among Undergraduate Graders Scoring Open-Ended Statistics Tasks. Preprint URL: <https://arxiv.org/abs/2410.18062>

Li, Susan Lloyd, Beckman, & Passonneau (2023). Answer-state Recurrent Relational Network (AsRRN) for Constructed Response Assessment and Feedback Grouping. *Findings of the Conference on Empirical Methods in Natural Language Processing (EMNLP) 2023*

Susan Lloyd, Beckman, Pearl, Passonneau, Li, & Wang (2022). Foundations for AI-Assisted Formative Assessment Feedback for Short-Answer Tasks in Large-Enrollment Classes. In *Proceedings of the eleventh international conference on teaching statistics*. Rosario, Argentina.

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Statistics & Data Science Education (SDSE) Research



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Other Projects/Interests

- Educational Assessment
 - Developing & analyzing tools to measure specific learning outcomes. Novel approaches to assessment.
 - "Tests" for research across academic institutions;
 - Formative assessment; e.g., feedback for self-regulated learning and/or adaptive instruction
 - > Sayali Phadke, Beckman, Lock Morgan (2024). Measuring contextualized statistical literacy: Evidence from an isomorphic assessment.
- Data Science Education
 - Intersection of stat education & computing education
 - Mixed-methods analysis of Intro DS Course content
 - Studying DS/CS topics introduced as learning objectives in statistics curricula
 - Data literacy, data acumen, EDA for Data Science
 - > Alyssa Hu, Hatfield, Beckman (2025). Exploring individuals' computational thinking with data. *ZDM Mathematics Education*, 57.
 - > Beckman et al (2021). Implementing Version Control With Git and GitHub as a Learning Objective in Statistics and Data Science Courses. *JSDSE*, 29(1).

Want to learn more?

- SDSE Research Lab (email me)
- Drop by my office! (420 Thomas)
- Ashtekar Lecture Feb 28th @ 11am
- Conferences: JSM; eCOTS 2026
- causeweb.org