Frank Stinar

(Human + Machine) Learning Lab
Department of Information Science
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EDUCATION

PhD Information Science, University of Illinois Urbana–Champaign, Champaign, Expected 2027

BS Computer Science, University of Colorado Boulder, 2021

RESEARCH APPOINTMENTS

2021– University of Illinois Urbana–Champaign
Research Assistant, *FairFL-MC: A Metacognitive Calibration Intervention Powered by Fair and Private Machine Learning*, 2025–
Research Assistant, *Exploring Algorithmic Fairness and Potential Bias in K-12 Mathematics Adaptive Learning*, 2021–2025

2026 Microsoft Research
PhD Research Intern, NYC MSR Computational Social Science

2020–21 University of Colorado Boulder
Undergraduate Research Assistant, Identity Lab, Information Science, 2020–2021
Undergraduate Research Assistant, Institute of Cognitive Science, Department of Computer Science, 2020

PEER-REVIEWED PUBLICATIONS

In press **F. Stinar**, H. Lee, C. Belitz, N. Nasiar, S.E. Fancsali, S. Ritter, H. Almoubayyed, R. Baker, J. Ocumpaugh, & N. Bosch. Fairness implications of unmodeled reading skills in adaptive learning systems. *Journal of Educational Data Mining*.

2026 H. Lin & **F. Stinar**. Measuring feature-level changes in unfairness mitigation. *Proceedings of the 19th International Conference on Educational Data Mining (EDM 2026)*. DOI: 10.5281/zenodo.21039864

2026 **F. Stinar**, R. Zong, D. Wang, & N. Bosch. EdataWeave: Collecting learning behaviors across multiple platforms. *Proceedings of the 13th ACM Conference on Learning@Scale (L@S 2026)*. DOI: 10.1145/3774398.3811562

2025 R. Zong, Y. Zhang, L. Shang, **F. Stinar**, N. Bosch, & D. Wang. Bidirectional human-AI collaboration for equitable student performance prediction via deep uncertainty learning. *Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence*. DOI: 10.24963/ijcai.2025/1114

2025 **F. Stinar**, H. Lee, C. Belitz, N. Nasiar, S.E. Fancsali, S. Ritter, H. Almoubayyed, R. Baker, J. Ocumpaugh, & N. Bosch. Fairness of Bayesian Knowledge Tracing for math learners of different reading ability. *Proceedings of the 18th International Conference on Educational Data Mining (EDM 2025)*. **Best Full Paper Nominee** DOI: 10.5281/zenodo.15870164

2025 N. Nasiar, C. Belitz, H. Lee, **F. Stinar**, R. Baker, J. Ocumpaugh, S.E. Fancsali, H. Almoubayyed, S. Ritter, & N. Bosch. Investigating algorithmic bias in affect detectors with constructed categories of student identity. *Proceedings of the 33rd International Conference on Computers in Education. Asia-Pacific Society for Computers in Education*. DOI: biblio/10658124

2025 **F. Stinar** & N. Bosch. Surveying contextualized student data sharing preferences for educational AI. *Proceedings of the 26th International Conference on Artificial Intelligence in Education (AIED 2025)*. DOI: 10.1007/978-3-031-98417-4_25

2025 C. Belitz, H. Lee, N. Nasiar, S.E. Fancsali, **F. Stinar**, H. Almoubayyed, S. Ritter, R. Baker, J. Ocumpaugh, & N. Bosch. Exploring student identity in adaptive learning systems through qualitative data. *Proceedings of the 26th International Conference on Artificial Intelligence in Education (AIED 2025)*. DOI: 10.1007/978-3-031-98462-4_45

2025 H. Lee, **F. Stinar**, R. Zong, H. Valdiviejas, D. Wang, & N. Bosch. Learning behaviors mediate the effect of AI-powered support for metacognitive calibration on learning outcomes. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*. **Best Paper Honorable Mention** DOI: 10.1145/3706598.3713960

2024 **F. Stinar**, Z. Xiong, & N. Bosch. An approach to improve *k*-anonymization practices in educational data mining. *Journal of Educational Data Mining*. DOI: 10.5281/zenodo.11056082

2023 R. Zong, Y. Zhang, **F. Stinar**, L. Shang, H. Zeng, N. Bosch, & D. Wang. A crowd-AI collaborative approach to address demographic bias for student performance prediction in online education. *AAAI Conference on Human Computation and Crowdsourcing (HCOMP 2023)*. DOI: 10.1609/hcomp.v11i1.27560

2022 **F. Stinar** & N. Bosch. Algorithmic unfairness mitigation in student models: When fairer methods lead to unintended results. *Proceedings of the 16th International Conference on Educational Data Mining (EDM 2022)*. DOI: 10.5281/zenodo.6853134

2022 S. Hum, **F. Stinar**, H. Lee, J. Ginger, & H.C. Lane. Classification of natural language descriptions for Bayesian knowledge tracing in Minecraft. *Proceedings of the 23rd International Conference on Artificial Intelligence in Education (AIED 2022)*. DOI: 10.1007/978-3-031-11647-6_45

EXTENDED ABSTRACTS (NON-ARCHIVAL)

2026 **F. Stinar**, A. Anderson, & J. Hofman. Octopilot: An instructor-governed AI coding environment for computer science education. *12th International Conference on Computational Social Science (IC2S2 2026)*.

ORGANIZED WORKSHOPS & TUTORIALS

In press **F. Stinar**, J.M. Cock, & S. Hutt. Breaking the aggregate: Uncovering the hidden consequences. *Proceedings 17th International Conference on Learning Analytics & Knowledge (LAK 27)*.

2026 **F. Stinar**, Y. Chengyuan, M. Marras, Y. Renzhe, & N. Bosch. Fair4AIED 2026: Second international workshop on fairness in AI-assisted decision-making for education. *Proceedings of the 27th International Conference on Artificial Intelligence in Education (AIED 2026)*. DOI: 10.1007/978-3-032-29794-5_15

2025 **F. Stinar***, J.M. Cock*, R. Kizilcec, & T. Kaser. Applying DebiasEd: A package for mitigating unfairness in educational data. *Proceedings of the 18th International Conference on Educational Data Mining (EDM 2025)*. DOI: 10.5281/zenodo.15870322

2025 C. Belitz, N. Bosch, L. Jiang, I. Jivet, B. Kirouchenassamy, H. Lee, B. Leporini, F. Malloci, M. Marras, D. Rotelli, & **F. Stinar**. Fair4AIED 2025: first international workshop on fairness in algorithmic decision-making for education. *Proceedings of the 26th International Conference on Artificial Intelligence in Education (AIED 2025)*. DOI: 10.1007/978-3-031-99267-4_40

CONTRIBUTIONS TO GRANT WRITING

2025–27 EASE: Educational AI Stakeholder Ethics ($19,944). University of Illinois Campus Research Board (RB26029). *Graduate students are not eligible to be PIs at UIUC, but I led the research conceptualization and grant writing process.*

INVITED TALKS

2026 "Modernizing and Decentralizing Ethics in Educational AI". Northeastern University

2026 "Improving Metacognitive Calibration with AI". 2026 AImpact Workshop.

2026 "AI Ethics in Education". iSchool Doctoral Seminar. University of Illinois Urbana–Champaign.

2025 "Student Perceptions and Interactions with AI". Cognitive Science of Teaching & Learning Seminar. University of Illinois Urbana–Champaign.

2025 "How Unfairness Mitigation Distorts Student Data". Fair4AIED 2025 Workshop.

GUEST LECTURES

2025 "Explainable and Interpretable AI". IS 557–Machine Learning Team Projects. University of Illinois Urbana–Champaign.

2025 "Regression II". IS 327–Concepts of Machine Learning. University of Illinois Urbana–Champaign.

2025 "Regression I". IS 327–Concepts of Machine Learning. University of Illinois Urbana–Champaign.

2025 "Conditional Average Treatment Effects". IS 590ML–Causal Inference Machine Learning. University of Illinois Urbana–Champaign.

2025 "AI Ethics". BTW 250–Principles of Business Communication. University of Illinois Urbana–Champaign.

TEACHING & MENTORSHIP

2022– Research Mentor. University of Illinois Urbana–Champaign.

2024 Teaching Assistant. IS 477–Data Management, Curation, & Reproducibility. University of Illinois Urbana–Champaign.

2018–21 Senior Resident Advisor. University of Colorado Boulder.

2017–19 Computer Science Instructor. Frontier Academy.

Students Mentored

2026–26 Yue Lei

2025–26 Jian Jo

2023–25 Hanning Lin ->*Masters at UC Berkeley*.

2022-23 Zihan Xiong -> *Masters at UPenn*.

SERVICE

Peer Review

Social Sciences & Humanities Open Reports '26

Workshop on Artificial Intelligence with and for Learning Sciences '26
International Journal of Artificial Intelligence in Education '26
Journal of Educational Data Mining '26
International Conference on Artificial Intelligence in Education '26
International Conference on Educational Data Mining '22, '24, '25, '26
ACM Conference on Learning@Scale '26
iConference '25, '26
CHI Conference on Human Factors in Computing Systems '27

Miscellaneous Service

- Festival of Learning 2026 Student Volunteer (AIED, EDM, L@S)
- ACM FAccT 2025 Student Volunteer
- Board member of the Information Science Doctoral Student Association
- Founder of iSchool PHrienDs incoming PhD student mentorship program
- Student representative for the UIUC iSchool Doctoral Student Committee

HONORS & AWARDS

- Nominated for Best Full Paper: 2025 International Conference on Educational Data Mining
- Best Paper Honorable Mention: 2025 CHI Conference on Human Factors in Computing Systems
- NSF Research Experiences for Undergraduates

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