Zhikai Gao

Assistant Professor in Computer Science
Department of Mathematics and Computer Science
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EDUCATION

Ph.D. in Computer Science   North Carolina State University   2025
  Dissertation: Modeling and Predicting CS Students' Help-Seeking Activity in Office Hours
  Committee: Collin Lynch, Sarah Heckman, Soonhye Park, and Tiffany Barnes
M.S. in Computer Science   North Carolina State University   2020
  Thesis: Automatically Classifying Real-Time Course Questions on My Digital Hand
  Committee: Collin Lynch, Sarah Heckman, and Tiffany Barnes
B.E. in Computer Sci&Tech   Changchun University of Science and Technology   2018
  Memeber of Daheng Outstanding Students Cohort.(Top 10% CS students)

PUBLICATIONS

Peer-Reviewed Journal Articles

[**IJCCI'24**]   Earle-Randell, T. V., Wiggins, J. B., Ma, Y., Celepkolu, M., Bounajim, D., **Gao, Z.**, Ruiz, J., Boyer, K., Israel, M., Lynch, C. & Wiebe, E. (2024). The impact of near-peer virtual agents on computer science attitudes and collaborative dialogue. *International Journal of Child-Computer Interaction,* 100646.

[**JEDM'23**]   Gitinabard, N., **Gao, Z.**, Heckman, S., Barnes, T., & Lynch, C. F. (2023). Analysis of Student Pair Teamwork Using GitHub Activities. *Journal of Educational Data Mining,* 15(1), 32-62.

[**JEDM'22**]   **Gao, Z.**, Erickson, B., Xu, Y., Lynch, C., Heckman, S., & Barnes, T. (2022). You Asked, Now What? Modeling Students' Help-Seeking and Coding Actions from Request to Resolution. *Journal of Educational Data Mining,* 14(3), 109-131.

Peer-Reviewed Conference Papers

[**EDM'25**]   Hridi, A. P., Hoq, M., **Gao, Z.**, Lynch, C., Sahay, R., Hosseinalipour, S., & Akram, B. (2025). Privacy-Preserving Distributed Link Predictions Among Peers in Online Classrooms Using Federated Learning. *In Proceedings of the 18th International Conference on Educational Data Mining(EDM'25).* (In-press)

[**EDM'24a**]   **Gao, Z.**, Silva de Oliveira, G., Babalola, D., Lynch, C. & Heckman, S.(2024) Who should I help next? Simulation of office hours queue scheduling strategy in a CS2 course. *In Proceedings of the 17th International Conference on Educational Data Mining(EDM'24).* 484–490

[**SIGCSE'24a**]   Silva de Oliveira, G., **Gao, Z.**, Heckman, S., & Lynch, C. (2024). Exploring Novice Programmers' Testing Behavior: A First Step to Define Coding Struggle. *In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1 (SIGCSE' 24),* pp. 1251-1257.

[EDM'22]   **Gao, Z.**, Erickson, B., Xu, Y., Lynch, C., Heckman, S., & Barnes, T. (2022). Admitting you have a problem is the first step: Modeling when and why students seek help in programming assignments. *In Proceedings of The 15th International Conference on Educational Data Mining (EDM '22),* 508-514. **Best Paper Nominee**.

[SIGCSE'22]   **Gao, Z.**, Heckman, S., & Lynch, C. (2022). Who uses office hours? A comparison of in-person and virtual office hours utilization. *In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education-Volume 1 (SIGCSE' 22),* 300-306.

[EDM'21]   **Gao, Z.**, Lynch, C., Heckman, S., & Barnes, T. (2021). Automatically Classifying Student Help Requests: A Multi-Year Analysis. *In Proceedings of The 14th International Conference on Educational Data Mining (EDM'21),* 81-92.

Peer-Reviewed Workshop Papers

[WLIEDM'24]   **Gao, Z.**, Buddarapu, N., Babalola, D., Lynch, C., Deane, P., & Mitros, P.(2024). Automatic Essay Scoring for K-12 Writing Assignments with Open Source LLM. *In Proceedings of the Educational Data Mining in Writing and Literacy Education (WLIEDM) Workshop.* 13-17.

[CSEDM'23]   **Gao, Z.**, Lynch, C., & Heckman, S.(2023). Too long to wait and not much to do: Modeling student behaviors while waiting for help in online office hours. *In Proceedings of the 7th Educational Data Mining in Computer Science Education (CSEDM) Workshop.*

Posters, Doctoral Consortium, and Others

[SIGCSE'25a]   **Gao, Z.**, Islam, S., Scott, Lynch, C. & Heckman, S.(2025) Comparing Students' and Teachers' Assessments of Office Hours *The 56th ACM Technical Symposium on Computer Science Education V.2 (SIGCSE' 25),* pp. 1459-1460

[SIGCSE'25b]   Islam, S., **Gao, Z.**, Bacher, J., Silva de Oliveira, G., Patwardhab, V., Lynch, C. & Heckman, S.(2025) EclipseMonitor: A Real-Time Student Programming Environment Data Collection Tool *The 56th ACM Technical Symposium on Computer Science Education V.2 (SIGCSE' 25),* pp. 1489-1490

[EDM'24b]   **Gao, Z.** & Lynch, C.(2024), Building Predictive Models for CS Students Help-Seeking Behaviors with Coding Log Data. *In Proceedings of the 17th International Conference on Educational Data Mining(EDM'24).* 1003–1008

[SIGCSE'24b]   **Gao, Z.**, Gaweda, A., Lynch, C., Heckman, S., Babalola, D., Oliveira, G.(2024), Using Survival Analysis to Model Students' Patience in Online Office Hour Queues. *In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V.2(SIGCSE' 24),* 1646-1647.

TEACHING EXPERIENCE

Assistant Professor: Western Carolina University   Fall 2025- present
     CS 150: Problem Solving/Programming I
     CS 351: Data Structures and Algorithms
Instructor: North Carolina State University   Summer 2024
     CSC 116 - Introduction to Computing - Java
Teaching Assistant: North Carolina State University   Fall 2020-Fall 2021
     CSC 216 - Software Development Fundamentals

AWARDS AND HONORS

Research-Related Awards

<u>CSC Outstanding Research Award</u> (*Yearly top 2 Ph.D.*)	NC State, $250	2023
Summer Graduate Fellowship	NC State, $2,950	2022
<u>Best Paper Nominee</u>	Educational Data Mining	2022

Competitive Programming Awards

Second Prize in the 11st Northeast China Collegiate Programming Contest	2017
Silver Medal in China Collegiate Group Programming Ladder Tournament	2017
Bronze Medal in ACM International Collegiate Programming Contest Asia Regional	2016
Silver Medal in the Jilin Provincial Collegiate Programming Contest	2016,2017
Third Prize in the ACM-ICPC Northeast Invitational Programming Contest	2015

PROFESSIONAL SERVICE

CS Committe at Western Carolina University		since 2025
International Conference on Artificial Intelligence in Education (AIED)	Subreviewer	2025
ACM Conference on Innovation and Technology in Computer Science Education	PC Member	2025
Educational Data Mining in Writing and Literacy Instruction Workshop	Organizer	since 2024
International Conference on Learning Analytics & Knowledge (LAK)	Subreviewer	2024
SIGCSE Virtual Conference	PC Member	2024
ACM Technical Symposium on Computer Science Education (SIGCSE)	PC Member	since 2023
ACM Technical Symposium on Computer Science Education (SIGCSE)	Volunteer	2024-2025
ACM Technical Symposium on Computer Science Education (SIGCSE)	Session Chair	2024
NeurIPS Generative AI for Education (GAIED) Workshop	PC Member	2023
AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI)	PC Member	since 2023
Educational Data Mining in Computer Science Education (CSEDM) Workshop	PC Member	2023,2025
International Journal of Artificial Intelligence in Education (IJAIED)	Reviewer	since 2023

RESEARCH EXPERIENCE

Research Assistant: CONCERT (NSF #1821475)   2021 - 2022
The Arg Lab, Department of Computer Science, NC State University
- 10 Related Publication: JEDM'23, JEDM'22, EDM'24a, EDM'22, SIGCSE'22, EDM'21,CSEDM'23, EDM'24b, SIGCSE'24b, SIGCSE'25a

Research Assistant : FLECKS (NSF #1721000)   2022-2023
The Arg Lab, Department of Computer Science, NC State University
- Related Publication: IJCCI'24
- Assisted next NSF grant writing

Research Assistant: Writing Observer(ETS funded)   2023-2025
The Arg Lab, Department of Computer Science, NC State University
- Related Publication: WLIEDM'24
- Assisted next IES & NSF grant writing

MENTORING EXPERIENCE

Ahsen Malik	Undergrad, NC State.	NCSU Independent Study(2024 Fall)
Molly Sun	Undergrad, NC State.	NCSU Senior Design(2021)
Oishi Ghosh	Undergrad, Purdue University	NCSU REU Program(2022)
Bilal Almajnooni	Undergrad, King AbdulAziz University	NCSU-KAU Summer Camp(2022)
Yousef Al-Sayegh	Undergrad, King AbdulAziz University	NCSU-KAU Summer Camp(2022)