Jiachen Lilian Gong

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EDUCATION

CARNEGIE MELLON UNIVERSITY — Pittsburgh, PA
M.S., Education Technology and Applied Learning Sciences. GPA: 3.91 — 2019-2020

UNIVERSITY COLLEGE LONDON — London, UK
Data Science Summer School. — 2018

PEKING UNIVERSITY — Beijing, China
B.A., Sociology. GPA: 3.72 — 2014-2018

EXPERIENCE

ARIZONA STATE UNIVERSITY — Tempe, Arizona
Research Professional — Oct. 2023 - Present

- Conducted three quantitative studies with advanced statistical modeling to examine how student learning behaviors and contextual factors influence learning outcomes; delivered actionable insights to university leadership and the learning analytics research community.
- Managed two large language models (LLMs) customization projects with prompt engineering, supervised fine-tuning, and retrieval augmentation generation (RAG), with the purpose of protecting student privacy and enhancing second-language learning experiences.
- Lead a mixed-methods study with between-subjects experimental design to evaluate the validity of privacy-preserving synthetic datasets for education researchers. Insights serve directly to the development of a large-scale data sharing platform of 80 collaborating education institutes.

EXPLORELEARNING — Remote
Data Science Engineer — Sept. 2020 - Sept. 2023

- Conducted the Extract, Transform, Load (ETL) process to build large-scale student-system interaction datasets, enabling the company's core learning analytics pipelines.
- Designed and implemented a Bayesian Knowledge Tracing (BKT) model to power personalized learning paths in educational games, improving 3rd and 4th graders' mastery of fractions through adaptive content delivery.
- Delivered monthly learning analytics reports directly to the CEO and the learning design lead, shaping iterative improvements in adaptive learning design and informing key product development decisions.

FEATURED PUBLICATIONS

1. **Gong, J.**, Goldshtein, M., Xu, X., Arner, T., Roscoe, R. D., & McNamara, D. L2 English and culture as factors in college math achievement. In Proceedings of the Twelfth ACM Conference on Learning @ Scale (L@S '25). ACM. https://doi.org/10.1145/3698205.3733957

2. Imundo, M. N., Goldshtein, M., Watanabe, M., **Gong, J.**, Crosby, D. N., Roscoe, R. D., Arner, T., & McNamara, D. S. (2025). Awareness to Action: Student Knowledge of and Responses to an Early Alert System. Applied Sciences, 15(11), 6316. https://doi.org/10.3390/app15116316

3. Imundo, M. N., Li, S., Gong, J., Potter, A., Arner, T., & McNamara, D. S. (2025). Applying Self-Determination Theory to the Effective Implementation of Personalized Learning in Online Higher Education. Handbook of Personalized Learning, 334–351. https://doi.org/10.4324/9781032719467-26

4. Imundo, M. N., Watanabe, M., Potter, A. H., **Gong, J.**, Arner, T., & McNamara, D. S. (2024). Expert thinking with generative chatbots. Journal of Applied Research in Memory and Cognition, 13(4), 465–484. https://doi.org/10.1037/mac0000199

5. Christhilf, K., **Gong, J.**, & McNamara, D.S., (2024). Context-embedded knowledge tracing and latent concept detection in a reading game. In D. Spikol, O. Viberg, A. Martínez-Monés, & P. Guo (Eds.), L@S '24: Proceedings of the eleventh ACM conference on learning @ scale. Association for Computing Machinery. https://doi.org/10.1145/3657604.3664674

RESEARCH AND DEVELOPMENT PROJECTS

DEVELOPMENT AND EVALUATION OF LANGUAGE LEARNING LLMS

Directed the development and evaluation of an AI-powered language tutor bot, overseeing system architecture, customized LLM design, and iterative model optimization. Designed and executed a multi-phase evaluation framework to assess agents' adaptivity, accuracy, and instructional quality. Led a comprehensive user needs assessment and student-centered user study with student-centered design principles.

SUPERVISED FINE-TUNING LLM FOR TEXT REDACTION

Led the end-to-end development of a robust Personally Identifiable Information (PII) removal project, from operationalizing the annotation framework to construct the ground truth dataset, to supervised fine-tuning an LLM that achieved state-of-the-art F1 score, to executing large-scale redaction on 250k canvas discussion board entries available for education and NLP research community.

A COMPREHENSIVE EVALUATION OF AN EARLY ALERT SYSTEM

Conducted a large-scale evaluation of a university early alert system from 13,000+ students' institutional data. Applied advanced statistical modeling to identify how early alerts relate to academic performance and retention. Findings showed that negative alerts strongly predict lower GPA and dropout risk. This research further informed data-driven university-level decisions, highlighting the need for integrated, human-centered support beyond risk detection.