Christine Kwon

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EDUCATION

Aug 2022 — Present

PhD Student Researcher, Carnegie Mellon University

Pittsburgh, PA

Department: Human-Computer Interaction Institute (HCII)

Advisors: Amy Ogan, John Stamper

Aug 2018 — May 2022

Bachelors of Science in Mathematics, University of Notre Dame

Notre Dame, IN

Degree: Mathematics with a Computing concentration

RESEARCH INTERESTS

Educational technologies, learning sciences, AI-powered solutions, accessible educational solutions for marginalized communities, human-computer interaction, bilingual/multilingual education, educational video content analysis, generative AI learning tools

FELLOWSHIPS AND SCHOLARSHIPS

Aug 2025 — Present

Waibel Presidential Fellowship

Awarded the Waibel Presidential Fellowship, recognized for conducting research in computing technologies that improve human communication, internationalization, humanitarian development, and/or entrepreneurship.

Aug 2024 — Present

RADM Fred Lewis Scholarship I/ITSEC

Awarded the Annual RADM Fred Lewis I/ITSEC Postgraduate Scholarship, recognizing leadership potential in the Modeling & Simulation, Training, and Education communities. This prestigious scholarship supports innovation and workforce development through investment in future leaders.

RESEARCH PROJECTS

Sept 2022 — Present

Yiya AirScience

Yiya AirScience delivers practical educational remote courses on engineering through basic interactive technologies, specifically radio broadcasts and basic keypad phones, for learners within rural contexts in Northern Uganda. Aiming to minimize physical and financial barriers for learners, we aim to understand better how to provide equitable access to high-quality engineering education for all Ugandan learners.

- Currently leading mixed-methods research in AI-powered applications using mobile phones
- Lead and conducted qualitative investigations to understand and analyze learner experience from deployed courses by analyzing student interviews and log data
- Investigating the use of colonial versus local languages as a medium of instruction in the learner experience from past deployed courses. Findings from this analysis will be published in the 2025 International Conference of the Learning Sciences
- Investigated influential student demographic and motivation-related features on student learning, specifically course performance and completion.
- Assisting the on-site team with course development and various research tasks
- Imported and applied course data into an educational repository to track student learning

Sept 2025 — Present

AI Educational Technologies in Africa

This recognizes the importance of showing various stakeholders, including educators, policymakers, communities, families, and learners, how current AI innovative solutions for education address the needs of African learners. We aim to inform various stakeholders about the importance of meaningfully and carefully considered AI integration in African learning spaces and how to align AI solutions with the contextual needs and realities of African learners.

- Conducting a scoping review of 35-40 studies on AI in African education, documenting existing AI applications for education, stakeholder experiences, and research findings.
- Collecting relevant and various data sources to understand the current status of AI integration in education in African contexts and to reveal the gaps between what AI solutions have already been investigated and what exists in practice.

Sept 2024 — Present

Detecting Collaboration in Computer-Supported Learning

This project aims to detect significant collaborative moments within student teamwork in computer-supported learning environments. Initially, this project aimed to use the capabilities of Large Language Models (LLMs) to automatically detect significant moments of collaboration within student teamwork discourse. We are currently investigating the quality of collaboration in computer-based supported learning environments, comparing teamwork within close-ended versus open-ended programming tasks.

- Collaborating with a research team from Seoul National University (SNU) on research development
- Analyzing quality of collaboration in student discourse within open-ended and close-ended programming tasks
- Conducted qualitative error analyses to investigate differences in LLM versus human detection of collaborative moments

Sept 2022 — Jan 2025

Step-by-Step Tutorial Engine for Performance Readiness (STEPR)

STEPR is a developing knowledge-sharing platform that provides Sailors in Navy with semi-automated Sailor-generated content on vehicle maintenance. As vehicle maintenance tasks must follow the standing order of technical publications steps, our current work involves using AI-based assistance to verify that video-demonstrated task steps follow official manual steps.

- Developed a schema-based algorithm with LLM-based support using LangChain in Python to extract the hierarchy and context of task steps from auto-maintenance video tutorials
- Analyzed results from the LLM-based algorithm applied to diverse video datasets on auto-maintenance procedures
- Used video intelligence extraction methods in Google Cloud Platform (GCP) to detect and identify on-screen actions and objects in auto-maintenance video tutorials

Sept 2021 — May 2022

OCR Transcription for medieval Ge'ez script

This research focuses on transcribing medieval scripts for both identification and recognition of Ge'ez texts, transcribing text for Ethiopian scholars. Specifically, it is related to transcribing hand-written text recognition.

- Coded in Python automatic inference methods which fills out background of images with missing backgrounds
- Integrated the neural network with Flask-based web application in Python, enabling users to upload an image of certain unclear text and receive the predicted output

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PAPER PUBLICATIONS

1. Kwon, C., Ouyang, D., Wang, L., Conejo, D. E., Moletsane, P. P., Stamper, J., Ogan, A. (2026). EdTech for Last Mile Learners in the Global South: Navigating Technological and Motivational Learning Insights with Radios and Mobile Phones in Rural Uganda. Accepted for publication in CHI '26 Conference on Human Factors in Computing Systems
2. Asher, M. W., Kwon, C., Stamper, J., Ogan, A., & Carvalho, P. F. (2025, July). Validating a New Approach for Measuring Student Engagement in Remote, Low-Infrastructure Learning Environments. In *Proceedings of the Twelfth ACM Conference on Learning@ Scale* (pp. 62-72).
3. Kwon, C., Yao, Y., Che, Y., Stamper, J., & Ogan, A. (2025). Navigating Local versus Colonial Languages of Instruction in Out-of-School Contexts: Insights from a Randomized Controlled Trial in Uganda. In *Proceedings of the 19th International Conference of the Learning Sciences-ICLS 2025, pp. 1639-1643*. International Society of the Learning Sciences.
4. Lee, Y., Kwon, C., Seoh, S., Gweon, G., Stamper, J., & Rosé, C. P. (2025). Capturing Collaborative Competency with GPT-4o and ENA. In *Proceedings of the 18th International Conference on Computer-Supported Collaborative Learning-CSCL 2025, pp. 72-80*. International Society of the Learning Sciences.
5. Moore, S., Eckstein, L., Kwon, C., & Stamper, J. (2025, September). Integrating Generative AI into Instructional Design Practice: Effects on Graduate Student Learning and Self-Efficacy. In *European Conference on Technology Enhanced Learning* (pp. 367-381). Cham: Springer Nature Switzerland.
6. Kwon, C., King, J., Carney, J., & Stamper, J. (2024, July). A Schema-Based Approach to the Linkage of Multimodal Learning Sources with Generative AI. In *International Conference on Artificial Intelligence in Education* (pp. 3-10). Cham: Springer Nature Switzerland.
7. Kwon, C., Butler, D., Uchidiuno, J. O., Stamper, J., & Ogan, A. (2024, May). Investigating Demographics and Motivation in Engineering Education Using Radio and Phone-Based Educational Technologies. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (pp. 1-15).
8. Kwon, C., Stamper, J., King, J., Lam, J., & Carney, J. (2022). Multimodal Data Support in Knowledge Objects for Real-time Knowledge Sharing.
9. Kwon, C., Butler, R., Stamper, J., Ogan, A., Angela Forcier, E. F., & Wambuzi, S. (2023).

Learning Analytics for Last Mile Students in Africa. In *Proceedings of the 13th Learning Analytics and Knowledge Conference*.

10. Lee, Y., Kwon, C., Seoh, S., Gweon, G., & Stamper, J., (in press). Towards Capturing Collaboration Moments with GPT-4o and ENA. *Computer-Supported Collaborative Learning*
11. Carney, J., Belmont, N., King, J., Stamper, J., Kwon, C., Srinivasan, S., & Withington, J. (in press). LLM-enabled real-time training content curation to enhance performance. *Interservice/Industry Training, Simulation, and Education Conference.*
12. Carney, J., Belmont, N., King, J., Stamper, J., Kwon, C., Lam, J., ... & Alexandria, V. A. AI/ML-Driven Content Repository Maintenance.
13. Kwon, C., Wigness, M., & DEVCOM Army Research Laboratory. (2021). Enhanced Annotation for Semantic Segmentation in Unstructured Video Sequences for Robotic Navigation.

TEACHING

Jan 2024 — Dec 2025

Teaching Assistant — Pittsburgh, PA

Institution: Carnegie Mellon University

Courses: User-Centered Research and Evaluation (UCRE), Tools for Online Learning

INTERNSHIPS

Jun 2021 — Aug 2021

Undergraduate Intern (AEOP), Army Research Laboratory (ARL) — Adelphi, MD

- Studied the basics of meta-learning, specifically the combination of the benefits of Model Agnostic Meta-Learning (MAML) and the application of Langevin Dynamics on data
- Coded and applied neural networks in Python (Tensorflow) in order to apply MAML methods and methods of Langevin dynamics on data

Jun 2020 — Aug 2020

Undergraduate Intern (CQL), Army Research Laboratory (ARL) — Adelphi, MD

- Conducted research on methods of enhanced image segmentation on unstructured video sequences for robotic navigation
- Coded in Python to create and apply methods of automatic inference on unstructured video sequences
- Presented research contribution in both individual branch and directorate levels
- Published an abstract summarizing effects of methods of automatic inference in robotic navigation
- Submitted a technical report about process of creating methods of automatic inference on unstructured

Jun 2019 — Aug 2019

Undergraduate Intern, Applied Physics Laboratory (APL) at Johns Hopkins University — Laurel, MD

- Conducted research on multi-class target classification using Support Vector Machines (SVM) in the Multistatic Active Coherent (MAC) project
- Worked with code migration from Python 2.7 to Python 3.6
- Used Matlab to analyze features that contribute to multi-class classification

RELEVANT COURSEWORK

Jan 2026 — Present

Special Topics: Design and/or Policy, Carnegie Mellon University

Aug 2024 — Dec 2024

Special Topics: Augmenting Intelligence , Carnegie Mellon University

Mar 2024 — May 2024

Cognitive Perspectives HCI, Carnegie Mellon University

Jan 2024 — Mar 2024

Design Perspectives HCI, Carnegie Mellon University

Aug 2022 — Dec 2024

Learning Analytics and Educational Data Science, Carnegie Mellon University

Aug 2023 — Dec 2024

Persuasive Design , Carnegie Mellon University

Jan 2023 — May 2024	Applied Research Methods, Carnegie Mellon University
Mar 2023 — May 2024	Computer Science Perspectives HCI, Carnegie Mellon University
Jan 2023 — Mar 2024	Social Perspectives HCI, Carnegie Mellon University
Aug 2022 — Dec 2022	Evidence-based Educational Design , Carnegie Mellon University
Aug 2022 — Dec 2024	Process & Theory, Carnegie Mellon University