Hongxuan Chen

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Education

University of Illinois at Urbana-Champaign

Doctor of Philosophy in Computer Science — Fall 2021 - Present
- Research Area: Computer Science and Education
- Advised by Dr. Geoffrey Herman and Dr. Jeff Erickson
- Passed qualifying exam in Spring 2023
- Expected to graduate in May 2026

Bachelor of Science in Computer Science — Graduated in May 2021
- GPA: 4.0 — with Highest Honors

Research Interests

My research interests span a variety of topics in CS Education, including how students learn discrete mathematics and algorithm designs, collaborative learning in CS classrooms, and evaluation of curriculum and policies.

Peer-reviewed Publications

(Poster) **Chen, H.**, Braught, K., Herman, G.L., & Erickson, J., (2025). Novice Difficulties in Graph Layering for Algorithm Design. *Accepted by the 2025 ACM Technical Symposium on Computer Science Education (SIGCSE TS)*.

Poulsen, S., **Chen, H.**, Gertner, Y., Cosman, B., West, M., Herman, G.L. (2025) Measuring the Impact of Distractors on Student Learning Gains while Using Proof Blocks. *Accepted by the 2025 ACM Technical Symposium on Computer Science Education (SIGCSE TS).*

Chen, H., Li, A., Challen, G., & Cunningham, K., (2024). Implementation of Split Deadlines in a Large CS1 Course. *Proceedings of the 2024 ACM Technical Symposium on Computer Science Education (SIGCSE TS)*, Portland, OR, USA.

Poulsen. S., Gertner, Y., **Chen, H.**, Cosman, B., West, M., & Herman, G.L. (2024). Disentangling the Learning Gains from Reading a Book Chapter and Completing Proof Blocks Problems. *Proceedings of the 2024 ACM Technical Symposium on Computer Science Education (SIGCSE TS)*, Portland, OR, USA.

(Poster) Liu, J., Poulsen, S., **Chen, H.**, Williams, G., Gertner, Y. & Franklin, D. (2024). Teaching Algorithm Design: A Literature Review. *Proceedings of the 2024 ACM Technical Symposium on Computer Science Education (SIGCSE TS)*, Portland, OR, USA.

Chen, H., Fong, M.M., Herman, G.L., & Silva, M. (2023). Student Autonomy in Collaborative Learning: Effects of Meeting Time and Team Consistency. *Proceedings of the 2023 IEEE Frontiers in Education Conference (FIE)*, College Station, TX, USA.

Chen, H., West, M., Hilgenfeldt, S., & Silva, M. (2023). Measuring the Impact of a Computational Linear Algebra Course on Students' Exam Performance in a Subsequent Numerical Methods Course. *Proceedings of the 2023 ACM Technical Symposium on Computer Science Education (SIGCSE TS)*, Toronto, Canada.

Fong, M.M., Butler, L., **Chen, H**., & Herman, G.L. (2022). Validating an Observation Protocol for Structured Roles in Cooperative Learning. *Proceedings of the 2022 IEEE Frontiers in Education Conference (FIE)*, Uppsala, Sweden.

Fong, M.M., **Chen, H.**, Butler, L., & Herman, G.L. (2022). Developing an Observation Protocol for Cooperative Learning. *Proceedings of the 2022 American Society for Engineering Education (ASEE) Annual Conference & Exposition*, Minneapolis, MN, USA.

Mahmood, M.S., **Chen, H.**, Fong, M.M., & Herman, G.L. (2022). Work in Progress: Exploring Students' Misconceptions of Cache Memories. *Proceedings of the 2022 American Society for Engineering Education (ASEE) Annual Conference & Exposition*, Minneapolis, MN, USA.

Invited Talks

Implementation of Split Deadlines in a Large CS1 Course. Presented remotely with Geoffrey Challen at the Computing Education Seminar at University of California Davis, Oct. 2024.

Teaching Experience

Instructor (Co-teaching) Spring 2024

Department of Computer Science, University of Illinois Urbana-Champaign

CS233: Computer Architectures

- Teach lectures and lead flipped classroom collaborative learning sessions every class
- Manage every aspect of a course with about 280 students and 35 staff members

Graduate Teaching Assistant (Various Courses) Fall 2021, Summer 2022

Department of Computer Science, University of Illinois Urbana-Champaign

CS233: Computer Architectures, CS173: Discrete Structures

- Led weekly in-person discussion sessions
- Graded exams, proctored online exams, held office hours, maintained online course forum
- Authored supplementary reading materials for the course
- Clarified confusions and helped students understand course contents by answering students' questions in lectures, holding office hours, and hosting review sessions

Undergraduate Course Assistant (Various Courses) Spring 2018 - Spring 2021

Department of Computer Science, University of Illinois Urbana-Champaign

CS125: Introduction to Computer Science, CS233: Computer Architectures,
CS374: Introduction to Algorithms and Models of Computation

- Conducted quality assurance testing for newly developed course materials
- Guided and supported students by answering questions during lectures, holding discussion sessions, lab sessions, review sessions, and office hours
- Graded homework assignments for a theory course, providing helpful feedback and explanations for clarification

Services

Reviewer

2025 ACM Technical Symposium on Computer Science Education (SIGCSE TS)

2023 ACM Technical Symposium on Computer Science Education (SIGCSE TS)

Student Volunteer

2024 ACM Technical Symposium on Computer Science Education (SIGCSE TS)

Teaching Assistant Summer 2020

Girls Who Code, Remote

- Assisted instructors during synchronous online lectures, grading and office hours

- Organized advisory panels for socializing and establishing sisterhood and encourage high school female students to participate in CS

Honors and Awards

Teacher Ranked as Excellent Summer 2022
Department of Computer Science, University of Illinois Urbana-Champaign

Outstanding Course Assistant Spring 2021
Department of Computer Science, University of Illinois Urbana-Champaign
- Selective department-wise recognition with 5 recipients only

Bronze Tablet Honoree Spring 2021
University of Illinois Urbana-Champaign
- Highest honor for graduation awarded for top 3% students

Illinois Engineering Achievement Scholarship: $1,000 Spring 2021
Grainger College of Engineering, University of Illinois Urbana-Champaign

Professional Experience

Data Scientist Intern Summer 2019
Double Dragon Big Data, Guiyang, Guizhou, China
- Built scrapers to crawl web pages from Baidu Baike and managed data with SQL database
- Designed algorithms for data cleaning and determining latent network and relationships of thousands of words and phrases

Technical Skills

Programming
- App Development with React Native (TypeScript, JavaScript)
- Web Development (HTML/CSS/JavaScript, React)
- Database Management (SQL, MongoDB, Neo4j)
- Data Analysis (Python, R)
- Java, Python, C, JavaScript, TypeScript

Languages

Chinese (Mandarin): Native language
English: Fluent (117/120 on TOEFL iBT Test, July 2020)