Yuxuan Chen

(217) 819-0044
yuxuan19@illinois.edu
https://yuxuanchen01.com
https://github.com/yuxuanjerrychen01

EDUCATION

Master of Science, Computer Science — **Aug 2024 – Expected May 2026**
University of Illinois at Urbana-Champaign — Champaign, IL, United States
Advisor: Mariana Silva

Bachelor of Science, Mathematics & Computer Science — **Aug 2020 – May 2024**
University of Illinois at Urbana-Champaign — Champaign, IL, United States
Cumulative GPA: 3.98/4 (Bronze Tablet Award)

RESEARCH EXPERIENCE

Designing a New CS 1 Course for Engineering Students — **Sept 2023 – Present**
With Mattox Beckman, Mariana Silva — Champaign, IL, United States

- Conducted interviews with 14 faculty members from the Grainger College of Engineering to assess the current requirements of the CS1 course for engineering students
- Redesigned the curriculum for a large-scale CS 1 course (~1,000 students annually), balancing programming fundamentals with engineering applications
- Developed PrairieLearn assessments with auto-grading and randomized problem variations to promote mastery learning
- First-author paper under revision for the 2025 ASEE Annual Conference & Exposition

ScribeAR Research Team — **Feb 2023 – May 2024**
With Lawrence Angrave — Champaign, IL, United States

- Built a Captions feature using HTML/CSS, React TypeScript, and Material UI to enhance transcription user-friendliness
- Improved local storage, Speech-to-Text, and Speaker Diarization codebases
- Analyzed word accuracy of Speech Recognition APIs including Microsoft Azure, WebSpeech, and Whisper

Quantum Capacity Bounds and Semidefinite Programming — **Jan 2022 – May 2022**
With Felix Leditzky — Champaign, IL, United States

- Learned quantum information concepts including tensor products, quantum states, and entanglements
- Generated generalized Choi matrices for Depolarizing/Werner-Holevo Channels using Python
- Used SDP to numerically calculate upper bounds for Depolarizing/Werner-Holevo Channels of low dimension

Quantum Error Correction Code for Knots — **Sept 2021 – May 2022**
With Eric Samperton — Champaign, IL, United States

- Learned quantum information concepts including qubits, stabilizer codes, and distance of code
- Implemented algorithms in Python and Pari/GP to obtain differentials of chain complexes of knots in finite field Z/2
- Calculated distances of code, logical qubits, and physical qubits of chain complexes through Python and SageMath

Detecting Knottedness with Quantum Computers — **May 2021 – Jan 2022**
With Eric Samperton — Champaign, IL, United States

- Learned topological and quantum concepts including chain complexes, Khovanov Homology, and the QPE algorithm
- Implemented algorithms in Python and Pari/GP to obtain differentials of chain complexes of knots
- Constructed knot diagrams from SnapPy to support current theorem of the complexity of computing Khovanov Homology

TEACHING EXPERIENCE

UIUC CS357 Numerical Methods I – Course Assistant **Jan 2022 – May 2024**

With Mariana Silva Champaign, IL, United States

- Assisted over 2,000 students across 5 semesters (~400 per semester) in learning scientific computing and numerical methods including floating points, Taylor series, Markov chains, optimization, and PCA using Python
- Maintained the official course website by updating lecture notes and course logistics using Ruby Jekyll
- Developed lecture questions and exam questions for the course through PrairieLearn
- Answered conceptual/coding questions in lecture sessions, group activities, office hours and class forum
- Received the Outstanding Course Assistant Award for Fall 2023 for excellence in teaching and student support

UIUC CS519 Scientific Visualization – Course Assistant **May 2023 – Aug 2023**

With Eric Shaffer Champaign, IL, United States

UIUC CS124 Intro to Computer Science – Course Assistant **Jan 2021 – Dec 2021**

With Geoffrey Challen Champaign, IL, United States

ENTREPRENEURIAL EXPERIENCE

AristAI **Oct 2023 – Present**

Cofounder Champaign, IL, United States

Silicon Valley Entrepreneurship Workshop **Jan 2025**

With Technology Entrepreneur Center, University of Illinois Champaign, IL, United States

INTERN EXPERIENCE

University of Illinois Research Park – EnterpriseWorks **Champaign, IL, United States**

Senior Front End Developer Intern Sept 2022 – Dec 2022

Front End Developer Intern May 2022 – Sept 2022

With Laura Bleill

- Maintained and developed the UIRP official website on a weekly basis by fixing links, editing text, adjusting layouts, etc.
- Implemented multiple webpages for the UIRP official website, including Newsletter Subscription and Tenants page
- Created new websites for Cache Energy, Ensaras Inc., Editekk LLC, and GarboCarbo at UIRP using WordPress and HTML/CSS

ORGANIZATIONS

UIUC Chinese Engineering Student Association (CESA) **Champaign, IL, United States**

Vice President Jul 2023 – May 2024

Public Relations/Outreach Department Director Jul 2022 – Jul 2023

- Led an organization of 66 members, overseeing major events that enhanced community engagement
- Managed the execution of 2 ORD-UIUC student airport pickup events, assisting 251 new students in arriving safely at UIUC
- Secured $50,000 in sponsorships from companies including Tencent, Midea, and CheersYou

SKILLS & ABILITIES

- Programming/Tools: Python, Java, C++, C, HTML, CSS, JavaScript, TypeScript, React, Next.js, MySQL, Git, R, LaTeX
- Related Coursework: CS Education, AI/ML, Computational Social Science, Data Structures, Numerical Methods, Computer Architecture, Algorithms, Graph Theory, Database Systems, Abstract Linear Algebra, Statistics & Probability
- Language: Chinese (native), English (fluent) - TOEFL 118

PUBLICATIONS

1. Chenyan Zhao, **Yuxuan Chen**, Kangyu Feng, Geoffrey L Herman, Matthew West, and Mariana Silva. 2025. *Implementing a Tool for Structured Roles in Hybrid Collaborative Learning Environments*. Accepted to 2025 ASEE Annual Conference & Exposition.
2. Mohammed Hassan, **Yuxuan Chen**, Paul Denny, and Craig Zilles. 2025. *On Teaching Novices Computational Thinking by Utilizing Large Language Models Within Assessments*. In Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1 (SIGCSE TS 2025), February 26-March 1, 2025, Pittsburgh, PA, USA. ACM, New York, NY, USA, 7 pages.
3. Craig Zilles, Chenyan Zhao, **Yuxuan Chen**, Evan Michael Matthews, and Matthew West. 2024. *A Case for Bayesian Grading*. In Proceedings of the 2024 on ACM Virtual Global Computing Education Conference V. 1 (SIGCSE Virtual 2024). Association for Computing Machinery, New York, NY, USA, 275–278. https://doi.org/10.1145/3649165.3703624

HONORS & AWARDS

UIUC University Honors - Bronze Tablet Award (Top 3%)	**2024**
UIUC Outstanding Course Assistant Award	**2023**
UIUC Mrs. E. J. Hoover Mathematical Scholar	**2023**
UIUC Edmund J. James Scholar	**2022-2024**
UIUC Dean's List	**2020-2023**