# Jonathan Liu

☑ jonliu@uchicago.edu

http://liujon23.github.io/



# Education

#### 2021 – present

2016 - 2020

- **Ph.D. Student, University of Chicago** in Computer Science. Computer Science Education, advised by Dr. Diana Franklin.
- B.A., University of California, Berkeley Majors: Computer Science and Mathematics, with Honors. High Distinction in General Scholarship.

# **Peer-Reviewed Research Publications**

#### **Conference Proceedings**

1

D. Gonzalez-Maldonado, **J. Liu**, and D. Franklin, "Evaluating gpt for use in k-12 block based cs instruction using a transpiler and prompt engineering," in *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1*, ser. SIGCSETS 2025, Pittsburgh, PA, USA: Association for Computing Machinery, Mar. 2025, pp. 388–394. *O* DOI: 10.1145/3641554.3701910.

J. Liu, E. Goodwin, and D. Franklin, "Student utilization of metacognitive strategies in solving dynamic programming problems," in *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1*, ser. SIGCSETS 2025, Pittsburgh, PA, USA: Association for Computing Machinery, Mar. 2025, pp. 687–693. *9* DOI: 10.1145/3641554.3701888.

J. Liu, E. Goodwin, D. Saito-Stehberger, S. Jacob, M. Warschauer, and D. Franklin, "Teacher decisions and perspectives in scratch tipp&see implementation," in *Proceedings of the 56th ACM Technical Symposium on Computer Science Education V. 1*, ser. SIGCSETS 2025, Pittsburgh, PA, USA: Association for Computing Machinery, Mar. 2025, pp. 694–700. *9* DOI: 10.1145/3641554.3701885.

R. E. Dougherty, T. Randolph, T.-Y. Chen, *et al.*, "A survey of undergraduate theory of computing curricula," in *Proceedings of the 2024 on ACM Virtual Global Computing Education Conference V. 2*, ser. SIGCSE Virtual 2024, Virtual Event, NC, USA: Association for Computing Machinery, 2024, pp. 281–282. *O* DOI: 10.1145/3649409.3691070.

J. Liu and D. Franklin, "Introduction to quantum computing for everyone: Experience report," in *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 1*, ser. SIGCSE 2023, Toronto ON, Canada: Association for Computing Machinery, Mar. 2023. *O* DOI: 10.1145/3545945.3569836.

- J. Tsan, C. Butler, D. Gonzalez-Maldonado, **J. Liu**, C. Thomas, and D. Franklin, "An analysis of gallery walk peer feedback on scratch projects from bilingual/non-bilingual fourth grade students," in *Proceedings of the 2023 ACM Conference on International Computing Education Research Volume 1*, ser. ICER '23, Chicago, IL, USA: Association for Computing Machinery, Aug. 2023. *O* DOI: 10.1145/3568813.3600137.
- 7 A. Shah, J. Liu, K. Stephens-Martinez, and S. H. Rodger, "The cs1 reviewer app: Choose your own adventure or choose for me!" In *Proceedings of the 26th ACM Conference on Innovation and Technology in Computer Science Education V. 1*, ser. ITiCSE '21, Virtual Event, Germany: Association for Computing Machinery, Jun. 2021. *O* DOI: 10.1145/3430665.3456333.

C. H. Séquin, W. Brandon, and **J. Liu**, "Modular construction of symmetrical knots," in *Hyperseeing: Proceedings of SMI'2021 Fabrication and Sculpting Event*, ser. SMI'FASE 2019, Vancouver, Canada, Mar. 2019. *O* URL: https://naka242.github.io/SMIFASE2019/index.html.

#### **Journal Articles**

J. Liu, S. Poulsen, E. Goodwin, *et al.*, "Teaching algorithm design: A literature review," *ACM Trans. Comput. Educ.*, vol. 25, no. 2, May 2025. *O* DOI: 10.1145/3727987.

#### Posters

8

Z. Wu, J. Liu, E. Goodwin, and D. Franklin, *How do learners use scratch paper when working on dynamic programming problems?* Pittsburgh, PA, USA, 2025. *9* DOI: 10.1145/3641555.3705194.

**J. Liu**, S. Poulsen, H. Chen, G. Williams, Y. Gertner, and D. Franklin, *Teaching algorithm design: A literature review*, Portland, OR, USA, 2024. *9* DOI: 10.1145/3626253.3635548.

## Awards

2021-present	<ul> <li>Liew Family Graduate Fellowship, University of Chicago</li> </ul>
2025	• Committee on Education Graduate Fellow, UChicago Committee on Education
	<ul> <li>Outstanding Reviewer Award, SIGCSE TS 2025</li> </ul>
2023	Physical Sciences Teaching Prize, University of Chicago

## Service

2025	• Hybrid Experience Co-chair, International Computing Education Research (ICER) 2025
	• <b>Reviewer,</b> SIGCSE TS 2025 [Outstanding Reviewer Award]
2024-2025	• Organizing Committee, Code to PhD.
	• <b>CCTL Graduate Fellow</b> Learning with AI in the Liberal Arts (LAILA) Graduate Fellow, Chicago Center for Teaching and Learning (CCTL)
	• Graduate Assistant Teaching in the Generative AI Landscape, CCTL
2024	Hybrid Experience Co-chair, ICER 2024
	• Reviewer, ITiCSE 2024
2023	Hybrid Experience Co-chair, ICER 2023
	• Panelist, "ChatGPT: Friend or Foe? A Discussion for Students," University of Chicago
2022	• Co-Organizer, People and Tech Seminar, University of Chicago
2018-2020	• <b>President,</b> Undergraduate Group for Theoretical Computer Science, UC Berkeley

# **Teaching Experience**

### **College Courses**

Summer 2025	• Discrete Mathematics, University of Chicago (Instructor)
Fall 2023	• Games for Learning, University of Chicago (TA)
Spring 2023	• Theory of Algorithms, University of Chicago (Head TA)
Spring 2022	• Theory of Algorithms, University of Chicago (Head TA)
Summer 2019	• Multivariable Calculus, UC Berkeley (Undergraduate Student Instructor)

# Teaching Experience (continued)

• Calculus 2, UC Berkeley (Undergraduate Student Instructor) Fall 2018

### Other

- 2018 present • Instructor and Moderator, Art of Problem Solving, Inc. 2022 - 2023
  - Math Tutor, Wendell Phillips High School