# Jean Salac, PhD

Assistant Professor of Computer Science | Computing Education Research & Human-Centered Computing

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## Education

2021 PhD | Computer Science | **University of Chicago** | National Science Foundation Graduate Research Fellow
2020 MS | Computer Science | **University of Chicago**
2017 BS | Computer Science | **University of Virginia** | High Distinction

## Professional Appointments

2024-Present Assistant Professor of Computer Science, Carleton College

2022-24 Postdoctoral Researcher & Computing Innovations Fellow, University of Washington
- Mentor : Prof. Amy J. Ko
- Researched critical computing education for youth, namely how youth may learn to engage in the moral and ethical complexities of the world with computing, and how educators can facilitate this engagement

2017-21 Graduate Researcher, University of Chicago
- Mentor : Prof. Diana Franklin
- Applied human factors, statistical, and machine learning techniques to analyze student data
- Built a tool for automatic generation of personalized written assessments that incorporates student code, and a tool that scraped features of student code for static analysis

2021 AI/ML Education Research Intern, Apple Inc
- Mentor : Prof. R. Benjamin Shapiro
- Explored opportunities to introduce data science practices to K-12 students using Swift Playgrounds & Charts
- Incorporated the latest findings in computing education research into Apple's education strategy

2016-17 Undergraduate Researcher, University of Virginia
- Mentors : Prof. Luther Tychonievich & Prof. Rider Foley
- Researched problematic demographic categories used in STEM higher education
- Investigated the impact of informal computing education on low-income female youth of color

2016 Computer Science Education Intern, National Science Foundation
- Mentor : Dr. Jan Cuny
- Analyzed prior NSF CS education and broadening participation initiatives
- Researched social innovation best practices to help shape President Obama's CS for All initiative

## Honors, Awards, and Prominent Appointments

2024 **Best Paper Honorable Mention** | ACM Conference on International Computing Education Research (ICER)
2023 **Best Paper** | ACM Conference on International Computing Education Research (ICER)
2022-23 Advisory Board | CodePath
2022-24 **Computing Innovations Fellow** | National Science Foundation & Computing Research Association
2021 William Rainey Harper Dissertation Award | University of Chicago's Highest Honor for Graduate Students
2020-21 Graduate Fellow | Computing Research Association - Education
2020 EECS Rising Star | Rising Stars Academic Career Workshop for Women
2020 **Best Paper** | ACM Conference on International Computing Education Research (ICER)
2020 Online Organizing Committee Member | IEEE RESPECT Conference for Equity and Sustained Participation
2019 **Graduate Research Fellowship**, | National Science Foundation
2019 Bridge Builder Leadership Award, Computer Science Department Teaching Award, Physical Science Division Teaching Award Nomination | University of Chicago
2018 Graduate Student Leadership Award | University of Chicago
2018 **Best Paper Honorable Mention** | ACM CHI Conference on Human Factors in Computing Systems (CHI)
2017 Rader Award for Undergraduate Research | University of Virginia
2016 AAPI Young Leader | White House Initiative for Asian-Americans and Pacific Islanders (WHIAAPI)

## Publications

*In computing, conference papers undergo a highly selective, multi-stage peer review process and are considered on par with journal publications. Approximate acceptance rates : ICLS, IDC, ITiCSE, SIGCSE ∼25-30%; CHI, ICER ∼20-25%. † denotes mentored students.*

2025 **Jean Salac**, Lena Armstrong†, F. Megumi Kivuva†, Jayne Everson†, and Amy J. Ko. "How Economically-Marginalized Adolescents of Color Negotiate Critical Pedagogy in a Computing Classroom" In *ACM Transactions on Computing Education (TOCE)*, 2025.

2024 Rotem Landesman*†, **Jean Salac***, Jared Ordoña Lim†, and Amy J. Ko. "Integrating Philosophy Teaching Perspectives to Foster Adolescents' Ethical Sensemaking of Computing Technologies" In *Proceedings of the 2024 ACM Conference on International Computing Education Research (ICER)*, 2024. **Best Paper Award Honorable Mention.**

** co-first authors*

Rotem Landesman†, **Jean Salac**, Jared Ordoña Lim†, and Amy J. Ko. "'There Will Always be a Yes and No Side' : Facilitating Ethical Sensemaking Around Technology with Teens." Short Paper in *International Conference of the Learning Sciences (ICLS)*, 2024.

2023 **Jean Salac**, Alannah Oleson, Lena Armstrong†, Audrey Le Meur†, and Amy J. Ko. "Funds of Knowledge used by Adolescents of Color in Scaffolded Sensemaking around Algorithmic Fairness." In *Proceedings of the 2023 ACM Conference on International Computing Education Research (ICER)*, 2023. **Best Paper Award.**

Leah Perlmutter†, **Jean Salac**, and Amy J. Ko. "A field where you will be accepted : Belonging in student and TA interactions in post-secondary CS education" In *Proceedings of the 2023 ACM Conference on International Computing Education Research (ICER)*, 2023.

**Jean Salac**, Rotem Landesman†, Stefania Druga, and Amy J. Ko. "Scaffolding Children's Sensemaking around Algorithmic Fairness." In *Proceedings of the ACM Conference on Interaction Design for Children (IDC)*, 2023.

**Jean Salac**, Donna Eatinger, and Diana Franklin. "The Role of Spatial Orientation in Diagram Design for Computational Thinking Development in K-8 Teachers." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2023.

2022 Alannah Oleson*, Benjamin Xie*, **Jean Salac**, Jayne Everson†, F Megumi Kivuva†, Amy J Ko. "A Decade of Demographics in Computing Education Research : A Critical Review of Trends in Collection, Reporting, and Use" In *Proceedings of the 2022 ACM Conference on International Computing Education Research (ICER)*, 2022.

** co-first authors*

2021 **Jean Salac**, Cathy Thomas, Chloe Butler†, and Diana Franklin. "Investigating the Role of Cognitive Abilities in Computational Thinking for Young Learners." In *Proceedings of the 2021 ACM Conference on International Computing Education Research (ICER)*, 2021.

**Jean Salac**, Cathy Thomas, Chloe Butler†, and Diana Franklin. "Understanding the Link between Computer Science Instruction and Reading & Math Performance." Research Paper in the *Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, 2021.

**Jean Salac**, Cathy Thomas, Chloe Butler†, and Diana Franklin. "Supporting Diverse Learners in K-8 Computational Thinking with TIPP&SEE." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2021.

2020 Diana Franklin, **Jean Salac**, Zachary Crenshaw†, Saranya Turimella†, Zipporah Klain†, Marco Anaya†, Cathy Thomas. "Exploring Student Behavior Using the TIPP&SEE Learning Strategy" In *Proceedings of the 2020 ACM Conference on International Computing Education Research (ICER)*, 2020. **Best Paper Award.**

**Jean Salac** and Diana Franklin. "If They Build It, Will They Understand It ?: Exploring the Relationship between Student Code and Performance." Research Paper in the *Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, 2020.

**Jean Salac**, Cathy Thomas, Bryan Twarek, William Marsland, and Diana Franklin. "Comprehending Code : Understanding the Relationship between Reading and Math Proficiency, and 4th-Grade CS Learning Outcomes." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2020.

**Jean Salac**, Cathy Thomas, Chloe Butler†, Ashley Sanchez†, and Diana Franklin. "TIPP&SEE : A Learning Strategy to Guide Students through Use–>Modify Scratch Activities." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2020.

Jean Salac, Qi Jin†, Zipporah Klain†, Saranya Turimella†, Max White†, and Diana Franklin. "Patterns in Elementary-Age Student Responses to Personalized & Generic Code Comprehension Questions." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2020.

2019 Jean Salac, Max White†, Ashley Wang†, and Diana Franklin. "An Analysis through an Equity Lens of the Implementation of Computer Science in K-8 Classrooms in a Large, Urban School District." Research Paper in the *Proceedings of the ACM Technical Symposium on Computer Science Education (SIGCSE)*, 2019.

2018 David Weintrop, Afsoon Afzal, Jean Salac, Patrick Francis, Boyang Li, David C. Shepherd, and Diana Franklin. "Evaluating CoBlox : A comparative study of robotics programming environments for adult novices." In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (SIGCHI)*, 2018. Best Paper Honorable Mention.

Daniel S. Katz, Kyle E. Niemeyer, Sandra Gesing, Lorraine Hwang, Wolfgang Bangerth, Simon Hettrick, Ray Idaszak, Jean Salac, Neil Chue Hong, Santiago Nunez-Corrales, Alice Allen, R. Stuart Geiger, Jonah Miller, Emily Chen, Anshu Dubey, and Patricia Lago. "Fourth workshop on sustainable software for science : practice and experiences (WSSSPE4)." *Journal of Open Research Software* 6, no. 1 (2018).

## Grants : ∼ $500,000 total

2025 Joan Hanson Endowed Fund for Undergraduate Summer Research, Carleton College ($7980)

2022 Computing Innovations Fellowship, National Science Foundation & Computing Research Association ($290,726)

2019 Graduate Research Fellowship, National Science Foundation ($159,000)

2016 The Jefferson Trust, University of Virginia ($10,320)

## Invited Talks and Workshops

May-Oct 2025 Expert Panelist, CSTA 2026 Standards for K-12 Computer Science Education, Computer Science Teachers Association

May 2025 "Emergent Gateways and Gaps in Responsible Computing Education", Department of Computer Science, Grinnell College

April 2024 "Scaffolding Youth Sensemaking around Algorithmic Fairness", Perspectives on Promoting Algorithmic Justice in Artificial Intelligence and Machine Learning Education in K-12, Symposium at American Educational Research Association

Jan-June 2024 Expert Panelist, Delphi Study for *Exploring an AI Literacies Framework for Young Children*, University at Buffalo

January 2024 "Scaffolding Children in Learning to Code with TIPP&SEE", Elementary & Middle School Computer Science Teacher Professional Development, Korea Foundation for the Advancement of Science & Creativity

November 2023 "Critical Computer Science Learning for Youth", Department of Curriculum & Instruction, University of Illinois Urbana-Champaign

November 2023 "Critical Computer Science Learning for Youth", Computer Science Research Talk, Central Michigan University

November 2023 "Critical Computer Science Learning for Youth", Computer Science Tea Talk, Carleton College

October 2023 "Critical Computer Science Learning for Youth", Computing Education Research Seminar, University of California Davis

June 2023 "Scaffolding Youth Sensemaking Around Algorithmic Fairness", Graduate Seminar, University of Pennsylvania

April 2023 "The Kids are Alright : Scaffolding Critical Computing Consciousness in Children & Adolescents", Apple Inc

April 2023 "The Kids are Alright : Scaffolding Critical Computing Consciousness in Children & Adolescents", Program in Computing for the Arts & Sciences (PCAS) Speaker Series, University of Michigan

April 2023 "The Kids are Alright : Scaffolding Critical Computing Consciousness in Children & Adolescents", School of Information Colloquium, University of Texas-Austin

February 2023 "Moving from Equity to Justice in Computing instruction for Youth", Seminar Series on Primary (K–5) Computing Education Research – Teaching and Teachers, Raspberry Pi Foundation

July 2022 "TIPP&SEE : Scaffolding for K-8 Computer Science", K-8 Research+Practice Workshop by csedresearch.org, Computer Science Teachers Association

March 2021 *"Scratch Strategies to Engage Diverse Learners"*, Equity in Action Conference, **Computer Science Teachers Association**
February 2021 *"Scratch Strategies to Engage Diverse Learners"*, Excellence in Teaching Conference, **Notre Dame University**
2020-21 *Workshop on the Next 15 Years of Computing Education Research*, **National Science Foundation**
November 2020 *Accessible Computer Science Education Workshop*, **Microsoft Research**

## Students Mentored

2025 Aiden Johnson, Undergraduate at Carleton College
2025 Aurelia Peterson Rajalingam, Undergraduate at Carleton College
2023-24 Jared Ordoña Lim, Undergraduate at University of Washington → PhD Student at Georgia Tech
2022-24 Rotem Landesman, PhD Student at University of Washington
2022-23 Leah Perlmutter, PhD Student at University of Washington → Lecturer at Cornell University
2022-23 Lena Armstrong, Undergraduate at University of Pennsylvania → PhD Student at Harvard
2022 Audrey Le Meur, Undergraduate at University of Minnesota-Morris → Teacher at Teachers on Call
2019 Marco Anaya, Undergraduate at University of Chicago → Software Engineer at Amazon
2019 Zachary Crenshaw, Undergraduate at University of Chicago → Software Engineer at Epic
2019 Qi Jin, Undergraduate at University of Chicago
2019 Zipporah Klain, Undergraduate at University of Chicago → Software Engineer at Metron
2019 Ashley Sanchez, Undergraduate at Texas State University → Senior Technician at Dell
2019 Saranya Turimella, Undergraduate at University of Chicago → Associate at EY-Parthenon
2018-19 Chloe Butler, Masters Student at Texas State University → School Psychologist at Frisco Independent School District
2018-19 Max White, Undergraduate at University of Chicago
2018 Ashley Wang, Undergraduate at University of Chicago → Software Engineer at Meta
2017 Zené Sekou, Undergraduate at University of Chicago → Software Engineer at Amazon

## Teaching Experience

2024-Present **Assistant Professor** | Course(s) : Software Design, Human-Computer Interaction, Data Structures | Carleton College
2023 **Co-Instructor** | Course(s) : Philosophy behind Everyday Technologies | University of Washington Upward Bound Summer Academy
2022 **Lead Instructor** | Course(s) : Foundations of Computing with a Critical Lens | University of Washington Upward Bound Summer Academy
2017-19 **Teaching Assistant** | Course(s) : Computers for Learning (Game Engine Design, Introduction to Object-Oriented Programming) | University of Chicago
2016-17 **Teaching Assistant** | Course(s) : Human-Computer Interaction & Computer Architecture | University of Virginia
2013-17 **Museum Educator** | National Air & Space Museum

## Select Service

2025-Present Higher Education Representative, Computer Science Teachers Association - Minnesota Chapter (CSTA-MN)
2021-Present Program Committee Member, International Computing Education Research (ICER) Conference
2021-2023 Social Media Coordinator, International Computing Education Research (ICER) Conference
2021-Present Peer Reviewer, CHI, IDC, Communications of the ACM (CACM), Journal of Computer Science Education (CSE), Transactions of Computing Education (TOCE), Transactions of Human Factors in Computing (ToCHI)
2023 Program Committee Member, Conference on Primary & Secondary Computing Education Research (WiPSCE)
2023 Proposal Review Panelist, NSF Computer and Information Science and Engineering (CISE)
2018-21 Computer Science Representative, University of Chicago : (1) Graduate Recruitment Initiative Team & (2) Physical Sciences Division's Committee on Equity, Diversity, & Inclusion
2018-20 Co-Organizer, University of Chicago Research Symposia : (1) Women in STEM Symposium & (2) Transcending Boundaries Research Symposium for Scholars of Color
2018-19 Co-Chair & Founder, University of Chicago Graduate Women in Computer Science