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**Geoffrey Ramseyer**  
December 1, 2023

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## EDUCATION

### **Stanford University, Stanford, Sept 2017-Sept 2023**

Computer Science MS, PhD  
Advised by Professors Ashish Goel and David Mazières  
Thesis: *Scalable Infrastructure for Digital Currencies*

### **The University of Chicago, Chicago, Sept 2013-June 2017**

Mathematics BS (Honors) | Computer Science BS  
Phi Beta Kappa, Student Marshal, 2016-2017  
National Merit Scholar, Dean's List 2013-2017

### **Sophia University, Tokyo, Summer 2013**

Japanese Language Summer Session

## PUBLICATIONS

### **Pricing Personalized Preferences for Privacy Protection in Constant Function Market Makers**

*Mohak Goyal and Geoffrey Ramseyer*  
*Proceedings of the 2023 ACM CCS Workshop on Decentralized Finance and Security*  
*November 2023, Copenhagen*

### **Finding the Right Curve: Optimal Design of Constant Function Market Makers**

*Mohak Goyal, Geoffrey Ramseyer, Ashish Goel, and David Mazières*  
*The Twenty-Fourth ACM Conference on Economics and Computation, July 2023, London*

### **SPEEDEX: A Scalable, Parallelizable, and Economically Efficient Decentralized EXchange**

*Geoffrey Ramseyer, Ashish Goel, and David Mazières*  
*20th USENIX Symposium on Networked Systems Design and Implementation, April 2023, Boston*

### **Continuous Credit Networks and Layer 2 Blockchains: Monotonicity and Sampling**

*Ashish Goel and Geoffrey Ramseyer*  
*The Twenty-First ACM Conference on Economics and Computation, July 2020, Budapest*

### **Constrained Credit Networks**

*Geoffrey Ramseyer, Ashish Goel, and David Mazières*  
*Proceedings of The Web Conference 2020, April 2020, Taipei*

### **Verifiable Origami Construction**

*Geoffrey Ramseyer*  
*7OSME Conference Proceedings, September 2018*

## WORKING PAPERS

### **Fair Ordering via Streaming Social Choice Theory**

*Geoffrey Ramseyer and Ashish Goel*

### **Groundhog: Linearly-Scalable Smart Contracting via Commutative Transaction Semantics**

*Geoffrey Ramseyer and David Mazières*

### **Heterogeneous and Efficient Partial Auditing of Replicated State Machines**

*Geoffrey Ramseyer and David Mazières*

### **Augmenting Batch Exchanges with Constant Function Market Makers**

*Geoffrey Ramseyer, Mohak Goyal, Ashish Goel, and David Mazières*

## WORKSHOPS

### **Heterogeneous and Efficient Partial Auditing of Replicated State Machines**

*Geoffrey Ramseyer and David Mazières*  
*Workshop on Heterogeneous Trust in Distributed Systems*  
*October 2023, Princeton*

- Augmenting Batch Exchanges with Constant Function Market Makers**  
*Geoffrey Ramseyer, Mohak Goyal, Ashish Goel, and David Mazières*  
 5th International Conference on Blockchain Economics, Security and Protocols (Tokenomics)  
 October 2023, New York City
- Finding the Right Curve: Optimal Design of Constant Function Market Makers**  
*Mohak Goyal, Geoffrey Ramseyer, Ashish Goel, and David Mazières*  
 8th Market Innovation Workshop, May 2023
- Scaling On-Chain Asset Exchanges via Arrow-Debreu Exchange Markets**  
*Geoffrey Ramseyer, Ashish Goel, and David Mazières*  
 Workshop on Game Theory in Blockchain, WINE 2020, December 2020, Beijing

## TEACHING

- Stanford University, Computer Science Department, Course Assistant**  
*CS244b, Distributed Systems* Spring 2022  
*CS161, Design and Analysis of Algorithms* Winter 2020  
*CS261, Optimization and Algorithmic Paradigms* Winter 2019
- University of Chicago, Computer Science Department, Grader**  
*CMSC280, Formal Languages* Fall 2016

## WORK EXPERIENCE

- Stanford University; Stanford, CA; Postdoctoral Researcher**  
*Design and implement scalable infrastructure for digital currencies, continuing doctoral research with Ashish Goel and David Mazières.* Oct 2023-Present
- Nexus Labs; Researcher**  
*Assist in the design of zero-knowledge folding schemes.* May 2023-Nov 2023
- Stellar Development Foundation; San Francisco, CA; Researcher**  
*Prototyped an integration of SPEEDEX on Stellar and developed protocol upgrade specifications.* Jul 2021-Sep 2022
- Google Payments Compliance Team; Boulder, CO; Software Engineering Intern**  
*Prototyped a structured search system for sanctions screening.* Jun 2016-Sep 2016
- The University of Chicago Computer Science Department; Chicago, IL; Software Developer**  
*Rewrote CS22300 (Networks) router simulation project framework.* Sep 2015-Jan 2015
- Google Flights Backend Team; Boston, MA; Software Engineering Intern**  
*Launched service to synthesize flight schedules from imperfect data sources and created tools to measure schedule accuracy* Jun 2015-Sep 2015
- Keio University, Semiconductor Isotope Engineering, Itoh Group; Tokyo, Japan; Intern**  
*Programmed optical equipment to locate nitrogen vacancy centers within diamond crystals as part of a quantum computing research initiative.* Jun 2014-Aug 2014
- Student Integrated Feedback for Teachers; Chicago; Software Engineer**  
*Built tools for analyzing and presenting student feedback on teachers to administrators.* 2013-2016
- Tufts University, Center for Engineering Education & Outreach, Intern**  
*Designed and programmed bipedal and other nonconventionally mobile LEGO robots as pedagogical aids in an mechanical engineering course.* Summer 2012

## SERVICE

- Program Committee AFT 2023**
- Splash! Chicago; Chicago, IL; 2013-2016**  
*Directed educational programs for Chicago high school students.*
- FIRST Tournament Volunteer and Team Mentor; Boston, MA and Chicago, IL; 2013-2017**  
*Helped operate and judge FIRST robotics tournaments*