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**Geoffrey Ramseyer**  
September 30, 2024

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San Francisco, CA 94118

## 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

### **Fair Ordering for Replicated State Machines via Streaming Social Choice**

*Geoffrey Ramseyer and Ashish Goel*  
*The Twentieth Conference on Web and Internet Economics, December 2024, Edinburgh*

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

*Geoffrey Ramseyer, Mohak Goyal, Ashish Goel, and David Mazières*  
*The Twenty-Fifth ACM Conference on Economics and Computation, July 2024, New Haven*

### **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

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

*Geoffrey Ramseyer and David Mazières*  
<http://www.scs.stanford.edu/~geoff/papers/groundhog.pdf>

## WORKSHOPS

### **DeCl: Deterministic and Metered Native Sandboxes**

*Zachary Yedidia, Geoffrey Ramseyer, and David Mazières*  
*Workshop on Scalability and Interoperability in Blockchains, at AFT 2024*

September 2024, Vienna  
**Pricing Personalized Preferences for Privacy Protection in Constant Function Market Makers**  
*Mohak Goyal and Geoffrey Ramseyer*  
*The Latest in Defi Research*  
 May 2024, New York City

**Scalable, Frequent Batch Auctions with Multiple Numeraires**  
*Market Structure, Quantitative Trading, High Frequency, and Large Data*  
*Organized by the Stevanovich Center for Financial Mathematics at the University of Chicago*  
 May 2024, Chicago

**Fair Ordering via Streaming Social Choice Theory**  
*Geoffrey Ramseyer and Ashish Goel*  
*4th Workshop on Decentralized Finance, at FC 2024*  
 March 2024, Curaçao  
*ACM Symposium on Principles of Distributed Computing 2024 (Brief Announcement)*  
 June 2024, Nantes

**Heterogeneous and Efficient Partial Auditing of Replicated State Machines**  
*Geoffrey Ramseyer and David Mazières*  
*Workshop on Heterogeneous Trust in Distributed Systems, at AFT 2023*  
 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, at 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-Jul 2024

**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* Jun 2015-Sep 2015

*and created tools to measure schedule accuracy*

**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

**The Battery Powered Picklejar Heads, FIRST Robotics Team, Lead Programmer**  
*Wrote and maintained robot control libraries and a probabilistic localization system on computationally limited hardware* 2006-2013

## **SERVICE**

**Program Committee AFT 2023, 2024**

**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*