

# Samson Zhou

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## Curriculum Vitae

### Education

- 2011–Present **Purdue University**, *Ph.D. Candidate in Computer Science.*
- 2006–2011 **Massachusetts Institute of Technology**, *Masters of Engineering in Computer Science.*
- 2006–2011 **Massachusetts Institute of Technology**, *Bachelor of Science in Computer Science.*
- 2006–2011 **Massachusetts Institute of Technology**, *Bachelor of Science in Mathematics.*
- 2004–2006 **Texas A&M University.**
- 2002–2006 **A&M Consolidated High School.**

### Research Interests

Sublinear Algorithms  
Approximation Algorithms  
Randomized Algorithms  
Graph Theory  
Data Streams

### Experience

#### Academic

- Spring 2016 **Teaching Assistant**, *CS 381, Introduction to Analysis of Algorithms*, Purdue University.
- Fall 2015 **Teaching Assistant**, *CS 580, Design and Analysis of Algorithms*, Purdue University.
- Spring 2011 **Teaching Assistant: Tutorials**, *6.042, Mathematics for Computer Science*, Massachusetts Institute of Technology.

- Fall 2010 **Grader**, 6.046, *Design and Analysis of Algorithms*, Massachusetts Institute of Technology.
- Summer 2005 **Teaching Assistant: Tutorials**, MATH 142, *Business Mathematics II*, Texas A&M University.  
**Teaching Assistant: Tutorials**, MATH 141, *Business Mathematics I*, Texas A&M University.
- Professional**
- 2013–2015 **Graduate Assistant**, *Center for Science of Information*, Purdue University.  
 Created curriculum for the *Center for Science of Information's* online school, *LearningHub*
- 2006–2012 **Textbook Editor**, *Art of Problem Solving*.
- the Art of Problem Solving: Intermediate Algebra
  - the Art of Problem Solving: Intermediate Counting and Probability
  - the Art of Problem Solving: Calculus
- Assistant Instructor**, *Art of Problem Solving Online School*.  
 Answered questions and managed classroom forums for the following classes of *Art of Problem Solving's* Online School:
- Worldwide Online Olympiad Training
  - Olympiad Geometry
  - Intermediate Trigonometry and Complex Numbers
  - Intermediate Number Theory
  - Intermediate Algebra
  - AIME A Problem Series
  - AIME B Problem Series
  - AMC 12 Problem Series
  - AMC 10 Problem Series
- January 2011 **Software Developer**, *Micronotes*, MIT Externship Program.
- Research**
- 2016 **Visiting Scholar**, *Professor Krishna Narayanan*, Texas A&M University.  
**Visiting Scholar**, *Professors Muthu Muthukrishnan and Morteza Monemizadeh*, Rutgers University.  
 For the purpose of streaming algorithms and group testing
- 2014–Present **Research Assistant**, *Professor Elena Grigorescu*, Purdue University.
- Fall 2012 **Research Assistant**, *Professors Ramana Kompella and Jennifer Neville*, Purdue University.
- Spring 2010 **Research Assistant**, *Peter Graff*, MIT Linguistics Group.  
 Quantitative research in cognitive constraints on possible meanings in natural language

- Spring 2008 **Research Assistant**, *Professor Alex Pentland and Daniel Olguin Olguin*, MIT Media Lab.  
Data analysis on sociometric badges
- Summer 2005 **Researcher**, *Texas A&M Research Experience for Undergraduates (REU)*.  
Spatial and Nonspatial Modeling of Feral Cat, Dingo and Rabbit Interactions in Southwest Victoria Australia

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## Awards

- 2016 Graduate TA of the Year
- 2006 Siemens Award for Advanced Placement  
University Interscholastic League, General Mathematics, Texas State Champion

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## Research

- 2017 **Jeremiah Blocki, Samson Zhou**, *On the Depth-Robustness and Cumulative Pebbling Cost of Argon2i*, Cryptology ePrint Archive.
- Greg Frederickson, Samson Zhou**, *Optimal Parametric Search for Path and Tree Partitioning*, In Preparation.
- Jeremiah Blocki, Ben Harsha, Samson Zhou**, *On the Economics of Offline Password Cracking*, In Preparation.
- Elena Grigorescu, Erfan Sadeqi Azer, Samson Zhou**, *Longest Alignment with Edits in Data Streams*, Proceedings of 54th Annual Conference on Communication, Control, and Computing, Allerton.
- Funda Ergün, Elena Grigorescu, Erfan Sadeqi Azer, Samson Zhou**, *Streaming Periodicity with Mismatches*, Proceedings of 21st International Workshop on Randomization and Computation, RANDOM.
- Elena Grigorescu, Erfan Sadeqi Azer, Samson Zhou**, *Streaming for Aibohphobes: Longest Palindrome with Mismatches*, arXiv.
- 2016 **Marc Bury, Elena Grigorescu, Andrew McGregor, Morteza Monezadeh, Chris Schwiegelshohn, Sofya Vorotnikova, Samson Zhou**, *Structural Results on Matching Estimation with Applications to Streaming*, Submitted.
- Jeremiah Blocki, Samson Zhou**, *On the Computational Complexity of Minimal Cumulative Cost Graph Pebbling*, arXiv.
- Venkata Gandikota, Elena Grigorescu, Sidharth Jaggi, Samson Zhou**, *Nearly Optimal Sparse Group Testing*, Proceedings of 54th Annual Conference on Communication, Control, and Computing, Allerton.

**Elena Grigorescu, Morteza Monemizadeh, Samson Zhou**, *Streaming Weighted Matchings: Optimal Meets Greedy*, Submitted.

**Elena Grigorescu, Morteza Monemizadeh, Samson Zhou**, *Estimating Weighted Matchings in  $o(n)$  Space*, arXiv.

- 2011 **Samson Zhou**, *Human and Artificial Intelligence Acquisition of Quantifiers*, M.Eng. Thesis, Advised by Robert C. Berwick, MIT Professor of Computational Linguistics and Computer Science and Engineering.

## Talks

- 2017 **Streaming Periodicity with Mismatches**, *August 16*, 21st International Workshop on Randomization and Computation, RANDOM.

**Streaming for Aibohphobes: Longest Near-Palindrome under Hamming Distance**, *February 10*, Theory Seminar, Indiana University Bloomington.

**Streaming for Aibohphobes: Longest Near-Palindrome under Hamming Distance**, *February 9*, Theoretical Computer Science Reading Group, Purdue University.

**On the Computational Complexity of Minimal Cumulative Cost Graph Pebbling**, *January 23*, Cryptography Reading Group, Purdue University.

**Recent Results in Heavy Hitters**, *January 20*, Theoretical Computer Science Reading Group, Purdue University.

- 2016 **Recent Results in Group Testing**, *October 13*, Rutgers University.

**Nearly Optimal Sparse Group Testing**, *September 28*, 54th Annual Conference on Communication, Control, and Computing, Allerton.

**Nearly Optimal Sparse Group Testing**, *September 23*, Theoretical Computer Science Reading Group, Purdue University.

**Structural Results on Matching Estimation with Applications to Streaming**, *September 9*, Theoretical Computer Science Reading Group, Purdue University.

**Recent Results in Group Testing, Part 2**, *April 11*, Theoretical Computer Science Reading Group, Purdue University.

**Recent Results in Group Testing, Part 1**, *April 6*, Theoretical Computer Science Reading Group, Purdue University.

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## Professional Service

- 2016-Present **Organizer of the Theoretical CS Reading Group**, *Purdue University*.

**Reviewer or External Reviewer** for:

ACM-SIAM Symposium on Discrete Algorithms (SODA) 2017, ACM Symposium on Parallelism in Algorithms and Architectures (SPAA) 2017, Algorithmica (ALGO), IEEE Symposium on Foundations of Computer Science (FOCS) 2017, IEEE Transactions on Information Theory, International Computer Science Symposium in Russia (CSR) 2017, International Workshop on Randomization and Computation (RANDOM) 2016

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## References

**Greg Frederickson**, *Advisor*, Purdue University, gnf@purdue.edu.

**Elena Grigorescu**, *Advisor*, Purdue University, egrigore@purdue.edu.

**Jeremiah Blocki**, *Professor*, Purdue University, jblocki@purdue.edu.