

Education

- 2014–current **Ph. D. in Computer Science**, *Columbia University*.
Theory group, coadvised by Daniel Hsu and Allison Bishop
Research interests: algorithms, statistical learning theory, nonconvex optimization, obfuscation
- May 2017 **M. Phil in Computer Science**, *Columbia University*.
Subject: stochastic optimization
- 2012–2014 **M. A. in Mathematics**, *University of Pennsylvania*.
- 2010–2014 **B. S. in Computer Science and Mathematics**, *University of Pennsylvania*.
Magna Cum Laude. Honors in Mathematics

Publications

- A. Bishop, L. Kowalczyk, T. Malkin, V. Pastro, M. Raykova, and K. Shi. A simple obfuscation scheme for pattern-matching with wildcards. Submitted to Crypto 2018.
- Daniel Hsu, Kevin Shi, and Xiaorui Sun. Linear regression without correspondence. In *Advances in Neural Information Processing Systems 30*, 2017.
- Alexandr Andoni, Daniel Hsu, Kevin Shi, and Xiaorui Sun. Correspondence retrieval. In *Proceedings of the 2017 Conference on Learning Theory*, 2017.
- Jimmy Wang, Kevin Shi, Alan Stocker, and Daniel Lee. Optimal neural tuning for arbitrary stimulus priors. In *Computational and Systems Neuroscience*, 2012.

Experience

Research

- 09/2014–
current **Graduate Research Assistant**, *Cryptography Lab*, Columbia University.
Designing provable obfuscation schemes from simple assumptions. Understanding the limits of what function classes can be black box obfuscated
- 09/2014–
current **Graduate Research Assistant**, *Algorithmic Statistics Group*, Columbia University.
Designing provable algorithms for nonconvex optimization problems in machine learning. Characterizing the behavior of first-order algorithms on nonconvex landscapes
- 01/2017–
04/2017 **Visiting Graduate Student**, *Simons Institute for the Theory of Computing*, Berkeley.
Program on Foundations of Machine Learning
- 05/2012–
08/2012 **Summer Intern**, *Penn Applied Algebraic Topology*, University of Pennsylvania.
Studied a sheaf-theoretic generalization of network flow duality
- 05/2011–
08/2011 **REU in Computational Neuroscience**, *Lee Lab*, University of Pennsylvania.
Studied population codes of spike trains using information-theoretic techniques

Industry

- 05/2018–
08/2018 **Software Engineering Intern**, *Google*, Mountain View.
Research in model selection problems

- 05/2017– **Data Science Intern**, *Button*, New York City.
08/2017 Researched and implemented models for adaptive anomaly detection in Python. Enabled automatic learning and tracking of new partner launches. Deployed models to process all production data in real time
- 05/2014– **Computer Vision Intern**, *Lily Robotics*.
08/2014 Researched and implemented a vision-based people tracking system in C++ and OpenCV for use on a quadrotor platform. Used techniques from multiscale object detection, online machine learning, and sensor fusion
- 05/2013– **Research Intern**, *MIT Lincoln Laboratory*.
08/2013 Designed feature extraction algorithms for time series obtained from radar. Wrote internal paper

Teaching

Columbia University

- Fall 2016 **Programming and Problem Solving**, *Teaching Assistant*.
Spring 2016 **Advanced Machine Learning**, *Teaching Assistant*.
Fall 2015 **Algorithms for Massive Data**, *Teaching Assistant*.
University of Pennsylvania
Spring 2013 **Algorithms**, *Teaching Assistant*.
Fall 2012 **Theory of Computation**, *Teaching Assistant*.

Service

- 2017–2018 **Organizer**, *Data Science Institute Student Seminar*, Columbia University.
2016 **Organizer**, *Computer Science Department Coffee Hour*, Columbia University.
2012 –2014 **Chair**, *Penn Undergraduate Math Society*, University of Pennsylvania.
Reviewer, *STOC 2016*, *JMLR 2016*.

Awards

- 03/2018 **Oscar and Verna Byron Fellowship**, Columbia University.
04/2017 **Computer Science Service Award**, Columbia University.
09/2014 **PennApps Hackathon**, *Top 20*, University of Pennsylvania.
SmartBoard functionality using multiple webcams to track finger location and a projector to draw
09/2013 **PennApps Hackathon**, *Top 20*, University of Pennsylvania.
Automatic page-turner which listens to the musician and matches location in sheet music
12/2012 **Putnam Math Competition**, *Top 500*.
10/2012 **SAP Code Slam Grand Finals**, *1st Place*.

Technical Skills

Proficient with Python, Matlab, Java, Tensorflow
Familiar with C++, OpenCV, SQL