Chenyang Yuan

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Education

PhD in Electrical Engineering and Computer Science 2018 – Present
Massachusetts Institute of Technology, Cambridge, MA GPA: 5/5

MS in Electrical Engineering and Computer Science 2016 – 2018
Massachusetts Institute of Technology, Cambridge, MA GPA: 5/5
Thesis: Focused Polynomials, Random Projections and Approximation Algorithms for Polynomial Optimization over the Sphere

BA in Computer Science 2012 – 2016
University of Berkeley at California, Berkeley, CA GPA: 3.94/4

Selected Papers

Chenyang Yuan and Pablo Parrilo, "Semidefinite Relaxations of Products of Nonnegative Forms on the Sphere", *Preprint, arxiv*
Chenyang Yuan and Pablo Parrilo, "Maximizing Products of Linear Forms, and the Permanent of Positive Semidefinite Matrices", *Mathematical Programming Series A*
Jerome Thai, **Chenyang Yuan**, Alexandre Bayen, "Resiliency of Mobility-as-a-Service Systems to Denial-of-Service Attacks", *IEEE Transactions on Control of Network Systems*

Work

Research Intern, *Lyft* *June–September 2016*
- Worked with locations team on estimation of travel times using real-time traffic data derived from driver GPS routes.

Software Engineering Intern, *Clover Network Inc.* *June–September 2013*
- Amongst other projects, designed and built an API auto-documentation system and API Explorer.

Teaching

Teaching Assistant, *MIT* *Spring 2020 – Spring 2021*
- TA for Nonlinear Optimization (grad), Linear Algebra and Optimization (undergrad), Algebraic Techniques and Semidefinite Programming (grad)

Undergraduate Student Instructor, *UC Berkeley* *Fall 2013 – Spring 2016*
- Structure and Interpretation of Computer Programs, Discrete Math and Probability, Designing Information Devices and Systems, Efficient Algorithms and Intractable Problems.

Programming Skills

Proficient in Python, Julia, Javascript, LaTeX, Emacs, Git
Experience in Java, C, Rust, Haskell, Scheme, HTML, Hadoop, Android, SQL, Assembly

Selected Software Projects

SumOfSquares.py https://github.com/yuanchenyang/SumOfSquares.py
Sum of squares optimization modelling language built on top of picos. Features easy access to pseudoexpectation operators for both formulating problems and extracting solutions via rounding algorithms.

Interactive SICP Textbook http://xuanji.appspot.com/isicp/1-1-elements.html
Made an interactive version of the classic Structure and Interpretation of Computer Programs book with my friend. I created the asynchronous Javascript-based Scheme interpreter used on the website.

Selected Coursework

EECS: Information Theory, Cryptography, Graduate Algorithms and Theory, Compilers, Security, AI, Randomized Algorithms, Geometric Computing, Semidefinite Programming, Inference and Information

Math: Complex Analysis, Honors Abstract Algebra, High-dimensional Statistics

Physics: Analytical Mechanics, Quantum Mechanics, General Relativity, Electronics Lab