# Jeremy Kun

*Curriculum Vitae*

✉ *jkun /at/ google.com*

## Education

2011 - 2016 **University of Illinois at Chicago**, Ph.D in Mathematics.

2010 **Budapest Semesters in Mathematics**.
Graduated with honors.

2007 - 2011 **California Polytechnic State University**, B.S. in Mathematics, Minor in Computer Science.
Magna Cum Laude

## Work Experience

2017 - Present **Software Engineer**, *Google, Inc.*
Engineer focusing on resource planning and optimization. Worked on large integer linear programs for optimizing resource allocation in Google's datacenter fleet. Applied machine learning to problems therein

2016 - 2017 **Bitcoin Protocol Engineer**, *21, Inc.*
Acquired as Earn.com by Coinbase in 2018-04. Built the Django backend for a task marketplace, including surveys, branching task pipelines, and automated reviews. Additional roles building an elasticsearch integration, doing ad hoc data science, maintaining an open-source bitcoin wallet (two1-python), and a mobile developer

2013 - 2014 **Graduate Research Assistant**, *MIT Lincoln Laboratory*.
Research on graph representation learning, data mining on large networks. Proved theorems, designed algorithms, ran experiments, and wrote technical research papers

2012 **Ph.D Student Intern**, *Lawrence Livermore National Laboratory*.
Data mining research in wind energy and plasma physics

2011 - 2013 **Graduate Teaching Assistant**, *University of Illinois at Chicago*.
Taught calculus and introductory computer science

2009 **Software Developer Intern**, *Amazon.com*.
Worked on the message-passing framework in a million-line service-oriented C++ architecture which regulated inventory in all of Amazon's warehouses

2008 - 2009 **Junior Developer**, *CreateSpace On-Demand Publishing*.
Designed and developed a new accounting gateway infrastructure for a growing tech start-up, including writing thousands of lines of Java and SQL. Completed a technical writing training program

## Contract Work

2018 **Technical Reviewer**, *Impractical Python*, No Starch Press.
Publication date: 2018-08-07

2014 - 2015 **Technical Reviewer**, *Doing Math with Python*, No Starch Press.
Publication date: 2015-05-25

## Programming

Portfolio **Github Repository**.

Languages **Python, Java, HTML/CSS, Javascript/ES6, C++, Perl, SQL**, Languages I've written production code in.

## Publications

2018 **A Programmer's Introduction to Mathematics**, *Jeremy Kun*.

2018 **Treedepth Bounds in Linear Colorings**, *Jeremy Kun, Michael P. O'Brien, Blair D. Sullivan*, 44th International Workshop on Graph-Theoretic Concepts in Computer Science.

2016 **Graphs, New Models, and Complexity**, *Jeremy Kun*, The University of Illinois at Chicago.

2016 **A Confidence-Based Approach for Balancing Fairness and Accuracy**, *Benjamin Fish, Jeremy Kun, Adam Lelkes*, SIAM International Symposium on Data Mining.

2016 **Interception in Distance-Vector Routing Networks**, *David Burstein, Franklin Kenter, Jeremy Kun, Feng Shi*, Journal of Complex Networks.

2015 **On the Computational Complexity of MapReduce**, *Benjamin Fish, Jeremy Kun, Adam Lelkes, Lev Reyzin, Gyorgy Turan*, International Symposium on Distributed Computing.

2015 **Network Installation Under Convex Costs**, *Alexander Gutfraind, Jeremy Kun, Adam Lelkes, Lev Reyzin*, Journal of Complex Networks.

2015 **Fair Boosting: a Case Study**, *Benjamin Fish, Jeremy Kun, Adam Lelkes*, International Conference on Machine Learning Workshop on Fairness, Accountability, and Transparency in Machine Learning.

2015 **Open Problem: Learning Quantum Circuits with Queries**, *Jeremy Kun, Lev Reyzin*, Conference on Learning Theory.

2014 **A Boosting Approach to Learning Graph Representations**, *Rajmonda Caceres, Kevin Carter, Jeremy Kun*, SIAM International Conference on Data Mining Workshop on Mining Networks and Graphs.

2014 **On Coloring Resilient Graphs**, *Jeremy Kun, Lev Reyzin*, Mathematical Foundations of Computer Science.

2013 **Anti-Coordination Games and Stable Graph Colorings**, *Jeremy Kun, Brian Powers, Lev Reyzin*, Syposium on Algorithmic Game Theory.

## Talks

2020 **Math and Programming: A More Perfect Union**, *Math for America, Thursday Speaker Series*, Teaching talk.

2019 **Mathematics: The Good Parts**, *Disney Jedi Engineering Training Academy*, Engineering talk.

2019 **Mathematics: The Good Parts**, *Github*, Engineering talk.

2015 **Resilience and new approaches to approximate graph coloring**, *Theory Seminar, North Carolina State University*, Research talk.

2015 **A Gentle Introduction to Learning Theory**, *Graduate Student Colloquium, University of Illinois at Chicago*, Graduate student talk.

2015 **What Can Algorithms Tell Us About Life, Love, and Happiness?**, *Moraine Valley Community College STEM Talks*, General audience talk.

2015 **Information Monitoring in Routing Networks**, *Chicago Area SIAM Student Conference, Illinois Institute of Technology*, Graduate student talk.

2014 **On Resiliently Colorable Graphs**, *Computer Science Seminar, University of Illinois at Chicago*, Research talk.

2014 **Resilient Coloring and Other Combinatorial Problems**, *Midwest Theory Day. Purdue University*, Research talk.

2014 **How to Combine Graphs**, *Chicago Area SIAM Student Conference, Northwestern University*, Graduate student talk.

2013 **Anti-Coordination Games and Stable Graph Colorings**, *Computer Science Seminar, University of Illinois at Chicago*, Research talk.

2013 **Stable Graph Colorings, and Why You Should Care about NP**, *Graduate Student Colloquium, University of Illinois at Chicago*, Graduate student talk.

2013 **A Brief Overview of Persistent Homology and its Applications**, *Chicago Area SIAM Student Conference, University of Illinois at Chicago*, Graduate student talk.

## Other

Blog **Math Intersect Programming**, In-depth presentation of technical topics with full implementations in code. As of February 2017: 236 published posts, 2000 word average post length, over 3.5 million page views since June 2011.