

# Jeremy Kun

## Curriculum Vitae

✉ [jeremy /at/ 21.co](mailto:jeremy@21.co)

### Personal

Name Jeremy Kun

Research summary I am a theoretical computer scientist with broad interests, including complexity theory, graph theory and network science, learning theory, combinatorics, and geometry. My research to date focuses on theoretical and applied graph theory. I currently work as a backend engineer at 21 Inc.

Email [jeremy /at/ 21.co](mailto:jeremy@21.co)

Webpage <https://jeremykun.com>

### Education

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

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

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

### Work Experience

2016 - present **Backend Engineer**, *21 Inc.*  
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

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

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

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

2012 - Present **Webmaster**, [QED Math Symposium](#), Chicago Public Schools.

### Professional Programs

- June 2014 **Network Science Week**, *American Mathematical Society Mathematics Research Community*.  
Received mentoring, engaged in research to attack open problems, and developed new collaborations
- Summer 2013 **Ph.D Student Intern**, *MIT Lincoln Labs*.  
Research on machine learning in large graphs
- Summer 2012 **Ph.D Student Intern**, *Lawrence Livermore National Laboratory*.  
Data mining research in wind energy and plasma physics
- Summer 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

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## Programming

- Portfolio [Github Repository](#).
- Top Language **Python**.
- Competent Languages **Python, Java, C, C++, Haskell, Racket, HTML/CSS, Mathematica, Javascript/Node/ES6**.
- Familiar Languages **R, Perl, Bash, PHP, SQL**.

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## Publications

- 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*, Symposium on Algorithmic Game Theory.

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## Awards

- 2014 **Dean's Scholar Award**, *To provide the most distinguished, advanced-level graduate students with a period of time dedicated solely to the completion of their programs*, Granted by University of Illinois at Chicago.  
Monetary value of \$25,000
- 2015 **Best Student Poster Award**, *For the poster 'Information Monitoring in Routing Networks'*, Granted by SIAM Network Science 15.  
Monetary value of \$100
- 2011 **Charles J. Hanks Excellence in Mathematics Award**, *Demonstrated excellence and outstanding ability*, Granted by California Polytechnic State University.
- 2010 **Robert P. Balles Mathematics Award**, *Highest GPA in mathematics coursework after three years*, Granted by California Polytechnic State University.
- 2007 **Eagle Scout Award**, *Troop 234 of Moraga, CA*, Granted by Boy Scouts of America.

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## 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.