

Stephen J. Young

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EDUCATION

- Ph.D. Algorithms, Combinatorics and Optimization** December 2008
Georgia Institute of Technology
Thesis: *Random Dot Product Graphs: A Flexible Model for Complex Networks*
Advisor: Milena Mihail, College of Computing
- M.S. Operations Research** May 2008
Georgia Institute of Technology
- M.S. Applied Mathematics** May 2005
Georgia Institute of Technology
- B.S. Mathematics** May 2002
Rose-Hulman Institute of Technology
Graduated *magna cum laude* with minors in German and Computer Science
Technical Translator Certificate in German

JOURNAL PUBLICATIONS

- A characterization of partially ordered sets with linear discrepancy equal to 2.* Order, 24(3):139–153, 2007 (WITH D. M. HOWARD, M. T. KELLER).
- Directed random dot product graphs.* Internet Math., 5(1-2):91–111, 2008 (WITH E. SCHEINERMAN).
- Stanley depth of squarefree monomial ideals.* J. Algebra, 322(10):3789–3792, 2009 (WITH M. T. KELLER).
- Interval partitions and Stanley depth.* J. Combin. Theory Ser. A, 117(4):475–482, 2010 (WITH C. BIRÓ, D. M. HOWARD, M. T. KELLER, W. T. TROTTER).
- Degree bounds for linear discrepancy of interval orders and disconnected posets.* Discrete Math., 310(15-16):2198–2203, 2010 (WITH M. T. KELLER).
- On the Stanley depth of squarefree Veronese ideals.* Journal of Algebraic Combinatorics, 33(2):313–324, March 2011 (WITH M. T. KELLER, Y.-H. SHEN, N. STREIB).
- When linear and weak discrepancy are equal.* Discrete Math., 311(4):252–257, 2011 (WITH D. M. HOWARD).
- A Major League Baseball team uses operations research to improve draft preparation.* Interfaces, 42(2):119–130, March – April 2012 (WITH N. STRIEB AND J. SOKOL).
- Braess’s paradox in expanders.* Random Structures and Algorithms, 41(4):451 – 468, December 2012 (WITH F. CHUNG AND W. ZHAO).

CONFERENCE PUBLICATIONS

- Random dot product graph models for social networks.* in Algorithms and models for the web-graph, vol. 4863 of Lecture Notes in Comput. Sci., pp. 138–149. Springer, Berlin, 2007 (WITH E. R. SCHEINERMAN).
- Kernel models for complex networks.* in WebSci'09: Society On-Line. 2009 (WITH M. MIHAIL, Y. AMANATIDIS).
- Braess's paradox in large sparse graphs.* in Internet and Network Economics, AMIN SABERI, ed., vol. 6484 of Lecture Notes in Computer Science, pp. 194–208. Springer Berlin / Heidelberg, 2010 (WITH F. CHUNG).

SUBMITTED WORK

- Towards a weighted version of the Hajnal-Szemerédi theorem.* (WITH J. BALÓGH, G. KEMKES, C. LEE). August 2011, **submitted**.
- Improved multicommodity maximum flow.* (WITH F. CHUNG AND W. ZHAO). October 2011, **submitted**.
- The weighted spectrum of the universal cover and an Alon-Boppana result for the normalized Laplacian.* October 2011, **submitted**.
- The spectra of multiplicative attribute graphs.* (WITH M. RADCLIFFE). February 2012, **submitted**.
- The diameter of random cubic sum graphs.* April 2012, **submitted**.
- Spectrum of inhomogeneous random graphs.* (WITH M. MIHAIL). **in preparation**.
- The dimension of the minor poset.* (WITH N. STRIEB). **in preparation**.

RESEARCH POSITIONS

- National Security Agency** Fort Meade, Maryland Summer 2005
Summer Program for Operations Research Technology
- ◆ Derived theorems pertaining to a random graph model that gives rise to a social network.
 - ◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.
- National Security Agency** Fort Meade, Maryland Summer 2004
Summer Program for Operations Research Technology
- ◆ Researched, developed, and implemented graph theoretic metrics in support of the Knowledge System Prototype (KSP).
 - ◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.
- National Security Agency** Fort Meade, Maryland Summer 2002
Director's Summer Program
- ◆ Developed, augmented, and implemented existing model and algorithms for stochastic processing of classified data.
 - ◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.
- NSF/Rose-Hulman Institute of Technology** Terre Haute, Indiana Summer 2001
Undergraduate Mathematics Researcher, NSF Research Experience for Undergraduates
- ◆ Conducted research on the applications of graph theory to the theory of separable tilings of hyperbolic surfaces under the advisement of Prof. S. Allen Broughton.
- NSF/University of Tennessee, Knoxville** Knoxville, Tennessee Summer 2000
Undergraduate Mathematics Researcher, NSF Research Experience for Undergraduates
- ◆ Conducted research into the optimal control of Schrödinger's Equation under the advisement of Prof. Suzanne Lenhart and Dr. Vladamir Protopopescu (Oak Ridge National Laboratory).

ACADEMIC POSITIONS

University of Louisville Department of Mathematics Assistant Professor	Fall 2012 – Present
University of California, San Diego Department of Mathematics Post Doctoral Scholar/ Teaching Visitor	Fall 2009 – Summer 2012
Georgia Institute of Technology School of Computer Science Postdoctoral Fellow	Spring 2009 – Summer 2009
Georgia Institute of Technology School of Mathematics Graduate Teaching Assistant	Summer 2007, 2008 and Fall 2008
Georgia Institute of Technology College of Computing Graduate Teaching Assistant	Spring and Fall 2007
National Science Foundation/Georgia Institute of Technology School of Mathematics NSF VIGRE Trainee	Fall 2002 - Fall 2006, Spring 2008
◆ Reduced teaching load and additional research support.	

SELECTED PRESENTATIONS

Georgia Institute of Technology Atlanta, GA	October 2012
4 th Polish Combinatorics Conference Bedlewo, Poland	September 2012
Workshop on Combinatorics of Posets Krakow, Poland	September 2012
SIAM Conference on Discrete Mathematics Halifax, Canada	July 2012
Washington State University Pullman, WA	February 2012
Washington State University – TriCities Richland, WA	February 2012
University of Rhode Island Kingston, RI	February 2012
University of Louisville Louisville, KY	February 2012
London School of Economics London, England	November 2011
CanADAM Victoria, BC, Canada	June 2011
Random Structures and Algorithms Atlanta, GA	May 2011
AMS Sectional Meeting Las Vegas, NV	April 2011
6 th Workshop on Internet and Network Economics San Francisco, CA	December 2010
UCSD Combinatorics Seminar La Jolla, CA	March 2010
INFORMS Annual Meeting San Diego, CA	October 2009
5 th Workshop on Algorithms and Models for the Web-Graph San Diego, CA	December 2007
SIAM Conference on Discrete Mathematics Victoria, BC, Canada	June 2006

TEACHING EXPERIENCE

University of Louisville

- ◆ **Calculus I** Fall 2012 (20 students)
- ◆ **Mathematics for Elementary Education I** Fall 2012 (27 students)

University of California, San Diego

- ◆ **Calculus II** Fall 2010 (104 students)
- ◆ **Calculus III** Spring 2011 (166 students)
- ◆ **Calculus for Science and Engineering II** Winter 2010 (185 students)
- ◆ **Calculus and Analytic Geometry for Science and Engineering** Spring 2010 (187 students)
- ◆ **Introduction to Differential Equations** Fall 2009 (162 students) Winter 2011 (207 students)

Georgia Institute of Technology

- ◆ **Introduction to Proof** (College of Computing) Spring 2007 (53 students), Fall 2007 (53 students)
- ◆ **Applied Combinatorics** Summer 2007 (cotaught, 35 students), Summer 2008 (cotaught, 35 students)
- ◆ **Calculus I** Fall 2005 (76 students)
- ◆ **Linear and Discrete Mathematics** Spring 2005 (37 students), Fall 2008 (31 students)

SELECTED AWARDS AND HONORS

- ◆ Invited Participant – MITACS International Problem Solving Workshop 2012
- ◆ AMS-Simmons Travel Grant (\$4800 awarded) 2011
- ◆ Travel Award – CanaDAM 2011
- ◆ Travel Award – Random Structures and Algorithms 2011
- ◆ Outstanding Graduate Teaching Assistant, School of Mathematics 2008
- ◆ Student Travel Award – SIAM Discrete Mathematics 2006
- ◆ Graduate Research Fellowship Honorable Mention, National Science Foundation 2003
- ◆ VIGRE Traineeship (5 years), National Science Foundation, Georgia Institute of Technology 2002
- ◆ Honorable Mention, Mathematical Contest in Modeling 2002
- ◆ Meritorious, Mathematical Contest in Modelling 1999, 2000, 2001

SERVICE

- ◆ Reviewer, *Mathematical Reviews*
- ◆ Referee, *FILOMAT*, *Journal of Machine Learning*, *Order*, *Internet Mathematics*, *Random Structures and Algorithms*, *SIAM Journal on Discrete Mathematics*
- ◆ Graduate Student Member, Honor Committee Summer 2006 - Fall 2008
Georgia Institute of Technology
- ◆ Organizer, Lead TA Development Group Spring 2007 - Summer 2008
- ◆ Oral Presentation Judge, Undergraduate Research Symposium 2008, 2009
Georgia Institute of Technology
- ◆ Organizing Committee, High School Mathematics Contest 2008
Georgia Institute of Technology
- ◆ Head Grader, High School Mathematics Contest 2008, 2009
Georgia Institute of Technology
- ◆ New Teaching Assistant Orientation Advisory Board Summer 2007
Center for the Enhancement of Teaching and Learning
- ◆ Member, ad hoc committee on replacement textbook for Summer 2007
Linear and Discrete Mathematics
- ◆ Volunteer, High School Mathematics Contest, 2004, 2005, 2007, 2008, 2009
Georgia Institute of Technology

MEMBERSHIPS

- ◆ American Mathematical Society
- ◆ Mathematical Association of America
- ◆ Society for Industrial and Applied Mathematics