

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

PUBLICATIONS

- Stanley depth of squarefree monomial ideals*, (with M. T. KELLER). submitted, 2009.
- Kernel Methods for Complex Networks*, (with G. AMANATIDIS AND M. MIHAIL). accepted for WEBSCI09, 2009.
- A Brooks-type Theorem for the Bandwidth of Interval Graphs*, (with M. T. KELLER). submitted, 2008.
- Interval Partitions and Stanley Depth*, (with C. BIRÓ, D. M. HOWARD, M. T. KELLER AND W. T. TROTTER). submitted, 2008.
- General Random Dot Product Graphs*, (with M. MIHAIL). manuscript, 2008.
- Directed Random Dot Product Graphs*, Internet Math., (accepted 2008). (with E. R. SCHEINERMAN).
- Random Dot Product Graph Models for Social Networks*, in Algorithms and Models for the Web-Graph, vol. 4863 of Lecture Notes in Computer Science, 2007, pp. 138–149. (with E. R. SCHEINERMAN).
- A Characterization of Partially Ordered Sets with Linear Discrepancy Equal to 2*, Order, 24 (2007), pp. 139–153. (with D. M. HOWARD AND M. T. KELLER).

PRESENTATIONS

- ACO Student Seminar** Atlanta, GA April 2008
“History and Future of Complex Networks”
- Graduate Student Symposium** Atlanta, GA March 2008
“On the Linear Discrepancy of Interval Orders”
- 5th Workshop on Algorithms and Models for the Web-Graph** San Diego, CA December 2007
“Random Dot Product Graph Models for Social Networks”
- SIAM Conference on Discrete Mathematics** Victoria, BC, Canada June 2006
“Directed Random Dot Product Graphs”

Spring Meeting of Indiana Section of the MAA	Anderson, IN	March 2002
“Graph Colorings with Restrictions”		
19 th Rose-Hulman Undergraduate Mathematics Conference	Terre Haute, IN	March 2002
“Graph Colorings with Restrictions”		
29 th Pi Mu Epsilon Student Conference	Oxford, OH	October 2001
“A Faster Way to Split a Doughnut”		
19 th Rose-Hulman Undergraduate Mathematics Conference	Terre Haute, IN	March 2001
“Alternative to Factoring”		
18 th Rose-Hulman Undergraduate Mathematics Conference	Terre Haute, IN	March 2000
“Chaotic Behavior Over the Naturals”		
Rose-Hulman Seminar Series	Terre Haute, IN	May 1999
“Algorithmic RSA Number Factorization”		

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

Georgia Institute of Technology	School of Mathematics	Summer 2007, 2008 and Fall 2008
Graduate Teaching Assistant		
Georgia Institute of Technology	College of Computing	Spring and Fall 2007
Graduate Teaching Assistant		
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.		

TEACHING EXPERIENCE

Georgia Institute of Technology

Lead Instructor

- ◆ **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)

Recitation Instructor

- ◆ **Linear and Discrete Mathematics** Fall 2004 (39 students)
- ◆ **Calculus I** Fall 2004 (40 students), Fall 2003 (40 students)
- ◆ **Calculus II** Spring 2004 (35 and 74 students)
- ◆ **Precalculus** Fall 2003 (37 students)

AWARDS AND HONORS

- ◆ Outstanding Graduate Teaching Assistant, School of Mathematics 2008
- ◆ 2nd place, College of Sciences Oral Presentation, Graduate Student Symposium 2008
- ◆ Student Travel Award, Society of Industrial and Applied Mathematics 2006
- ◆ Graduate Research Fellowship Honorable Mention, National Science Foundation 2003
- ◆ VIGRE Traineeship (5 years), National Science Foundation, Georgia Institute of Technology 2002
- ◆ Presidential Fellowship (12 semesters), Georgia Institute of Technology 2002
- ◆ Clarence P. Sousley Award, for excellence in mathematics over undergraduate career, Rose-Hulman Institute of Technology 2002
- ◆ Honorable Mention, Mathematical Contest in Modeling 2002
- ◆ Meritorious, Mathematical Contest in Modelling 1999, 2000, 2001
- ◆ Honor Key Recipient, Rose-Hulman Institute of Technology 2001
- ◆ Theodore Paine Palmer Award, for excellence in mathematics in freshman year, Rose-Hulman Institute of Technology 1999
- ◆ Presidential Scholarship (4 years), Rose-Hulman Institute of Technology 1998
- ◆ National Merit Scholar 1998

SERVICE

- ◆ Referee, *Journal of Machine Learning*
- ◆ Referee, *Order*
- ◆ Referee, *Internet Mathematics*
- ◆ Referee, *Random Structures and Algorithms*
- ◆ Graduate Student Member, Honor Committee Georgia Institute of Technology Summer 2006 - Fall 2008
- ◆ Organizer, Lead TA Development Group Spring 2007 - Summer 2008
- ◆ Oral Presentation Judge, Undergraduate Research Symposium Georgia Institute of Technology 2008
- ◆ Organizing Committee, High School Mathematics Contest Georgia Institute of Technology 2008
- ◆ Head Grader, High School Mathematics Contest Georgia Institute of Technology 2008, 2009
- ◆ New Teaching Assistant Orientation Advisory Board Center for the Enhancement of Teaching and Learning Summer 2007
- ◆ Member, ad hoc committee on replacement textbook for *Linear and Discrete Mathematics* Summer 2007
- ◆ Volunteer, High School Mathematics Contest, Georgia Institute of Technology 2004, 2005, 2007, 2008, 2009
- ◆ Photographer, School of Mathematics, Georgia Institute of Technology 2004-2005
- ◆ Member, Alpha Phi Omega (national coed community service fraternity) 1998-2001

MEMBERSHIPS

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

- ◆ Association of Computing Machinery
- ◆ Pi Mu Epsilon, National Mathematics Honor Society