

Kevin G. Milans

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U.S. Citizen

Research Interests

Discrete mathematics, combinatorics, and graph theory. Specific interests include extremal combinatorics, probabilistic combinatorics, combinatorial games, combinatorial algorithms, and computational complexity of combinatorial decision problems.

Education

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| Expected
Summer 2010 | University of Illinois at Urbana Champaign , Ph.D. in Mathematics
Advisor: Professor Douglas B. West |
| December 2006 | University of Illinois at Urbana Champaign , M.S. in Computer Science
Thesis Title: "The Complexity of Graph Pebbling"
Advisor: Professor Jeff Erickson |
| May 2002 | Carnegie Mellon University , B.S. in Computer Science
Minor in Physics |

Publications

- K. G. Milans and B. Clark, The Complexity of Graph Pebbling. *SIAM J. Discret. Math.* 20(3) (2006), 769-798.
- D. P. Bunde, K. G. Milans, D. B. West, and H. Wu, Parity and strong parity edge-colorings of graphs. *Congressus Numer.* 187 (2007), 193-213.
- D. P. Bunde, E. W. Chambers, D. Cranston, K. G. Milans, and D. B. West, Pebbling and optimal pebbling in graphs. *J. Graph Theory* 57 (2008), 215-238.
- D. P. Bunde, K. G. Milans, D. B. West, and H. Wu, Optimal strong parity edge-coloring of complete graphs. *Combinatorica* 28 (2008), 625-632.
- R. Downey, N. Greenberg, C. Jockusch, and K. G. Milans, Binary subtrees with few labeled paths. Submitted.
- K. G. Milans, D. Rautenbach, F. Regen, and D. B. West, Cycle spectra of Hamiltonian graphs. Submitted.
- D. W. Cranston, N. Korula, T. LeSaulnier, K. G. Milans, C. Stocker, and J. Vandenbussche, Overlap number of graphs. In preparation.
- J. Butterfield, T. Grauman, B. Kinnarsley, K. G. Milans, C. Stocker, and D. B. West, Online degree-Ramsey theory. In preparation.
- B. Kinnarsley, K. G. Milans, and D. B. West, The degree-Ramsey number of graphs. In preparation.
- T. Jiang, K. G. Milans, and D. B. West, The degree-Ramsey number of cycles. In preparation.

- A. V. Kostochka, K. G. Milans, The chromatic number of K_4 -free circle graphs. In preparation.
- K. G. Milans, D. Schreiber, D. B. West, Acyclic sets in k-majority tournaments, In preparation.

Talks

July 2009	“Cycle Spectra of Hamiltonian Graphs”, SIAM Annual Meeting 2009, Denver, Colorado. (<i>Invited.</i>)
May 2009	“Computational Complexity aspects of Graph Pebbling”, CanaDAM 2009, Montreal, Quebec. (<i>Invited.</i>)
May 2009	“Binary Subtrees with Few Path Labels”, Cumberland 2009, Western Kentucky U.
November 2008	“Cycle Spectra of Hamiltonian graphs”, Midwest Graph Theory (MIGHTY) 47, Illinois Institute of Technology.
June 2008	“Binary Subtrees with Few Path Labels”, SIAM Conference on Discrete Mathematics, U. of Vermont.
April 2008	“Online Degree Ramsey Theory”, AMS Sectional Meeting, Indiana U. Bloomington. (<i>Invited.</i>)
November 2007	“On-line Ramsey Theory”, Combinatorics Seminar, U. of Louisville. (<i>Invited.</i>)
June 2006	“Parity Edge-Coloring of Graphs”, SIAM Conference on Discrete Mathematics, U. of Victoria.
May 2006	“Parity Edge-Coloring of Graphs”, Midwest Theory Day '06, Indiana U. Bloomington.
April 2006	“Parity Edge Coloring of Graphs”, DISCMATH Seminar, Illinois State U. (<i>Invited.</i>)

Employment

August 2002-present	Graduate Student Researcher, University of Illinois at Urbana-Champaign Researched combinatorial problems, including problems in Ramsey theory and extremal combinatorics (results described in research statement).
Summer 2002	Research Assistant, Carnegie Mellon University Conducted research under the supervision of Avrim Blum on the problem of efficiently learning monotone DNF formulae.
Summer 2001	Research Intern, Whizbang! Labs Researched and implemented machine learning algorithms to recognize tabular data in text documents.
Summer 1999, Summer 2000	National Institute of Standards and Technology (NIST) Developed scientific image processing software; see http://www.nist.gov/lispix/ .

Teaching Experience

Spring 2009	Teaching assistant for Math234, “Calculus for Business I”
Fall 2008	Teaching assistant for Math231, “Calculus II”
Summer 2008	Co-instructor for CS273, “Theory of Computation” Small lecture format; approximately 20 students.
Spring 2008	Co-instructor for CS173, “Discrete Structures” Large lecture format; approximately 120 students.
Fall 2007	Teaching assistant for Math221, “Calculus I”
Summer 2007	Designer and instructor for Theory Bridge Course Distance learning format; provides distance masters students with the discrete math background necessary for a graduate course in algorithms. Course materials available at http://www.math.uiuc.edu/~milans/teaching/cstbc/ .
Spring 2007	Teaching assistant for CS473g, “Graduate Algorithms”
Fall 2006	Teaching assistant for CS473ug, “Undergraduate Algorithms”
Fall 2004	Teaching assistant for CS375, “Formal Models of Computation”
Spring 2004	Teaching assistant for CS373, “Combinatorial Algorithms”
2002-2003	Teaching assistant for CS421, “Programming Languages”
Fall 2001	Teaching assistant for CS15-412, “Operating Systems”, Carnegie Mellon University

Honors, Awards, and Fellowships

August 2009	Dissertation Completion Fellowship; awarded by Mathematics Department and funded by the National Science Foundation
Spring 2009	List of Teachers Ranked as Excellent by their Students; Outstanding ratings designation.

Service

- Reviewer for AMS Mathematical Reviews, 9/2009-present.
- Referee for *Discrete Mathematics*: 12/2007, 5/2009, 7/2009, 9/2009.
- Referee for *Journal of Graph Algorithms and Applications*: 5/2009.
- Microteaching Facilitator, Graduate Academy for College Teaching, Fall 2009.
- Computer science and mathematics small group facilitator, TA orientation program, Graduate Academy for College Teaching, Fall 2008.