

Jeong-Hyun Kang

as of August 2014

Basic Information

- Department of Mathematics, University of West Georgia (On leave, Fall 2012– Spring 2014)
- Department of Applied Mathematics, Illinois Institute of Technology (Fall 2012– Spring 2013)
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- Visa status: US Citizen

Employment and Education

- Associate Professor, Department of Mathematics, University of West Georgia, 2011 – present
- Visiting Associate Professor, Department of Applied Mathematics, Illinois Institute of Technology, 2012 – 2013
- Assistant Professor, Department of Mathematics, University of West Georgia, 2006 – 2011
- Postdoctoral Fellow, Department of Mathematics, University of Central Florida, 2004 – 2006
- Ph.D, Department of Mathematics, University of Illinois at Urbana-Champaign, 2004
Dissertation: Covering and coloring of metric spaces, and $L(2, 1)$ -labeling of graphs
Advisor: Professor Zoltán Füredi
Teaching Assistant, Research Assistant, 1997–2004

Teaching Experience

- University of West Georgia, Fall 2006 – Present
 - Thesis Supervision**, Brian Brodsky, Master Research Project, Spring 2012
 - Independent Study on Linear Algebra, Graduate level
 - Math 6983 Research Project (Supervision of master research experience)
 - Math 6513 Applied Linear Algebra (Graduate course)
 - Math 4513/5513 Linear Algebra I
 - Math 4043/5043 Number Theory
 - Math 3003 Transition into Advanced Mathematics
 - Math 2654 Calculus III
 - Math 2009 Sophomore Seminar
 - Math 1634 – Honors, Calculus I
 - Math 1634 Calculus I
 - Math 1413 Survey of Calculus
 - Math 1111 College Algebra
- University of Central Florida, Fall 2004 – Spring 2006

Abstract Algebra (Graduate course)
Number Theory (Advanced undergraduate course)
Calculus I

- University of Illinois at Urbana-Champaign, Fall 1997 – Spring 2004
 - Instructor for the following courses with full responsibility:
 - Multivariable Calculus (Calculus III)
 - Introductory Linear Algebra
 - Calculus II
 - Calculus for Social Scientists
 - TA for the following advanced undergraduate courses with various responsibilities, including grading, office hours, and occasional lectures:
 - Probability, Linear Algebra, Combinatorics, Graph Theory
 - Co-author of proposal for graduate course on *Discrete and Convex Geometry* in May 2003.
 - Nominee for the department *Teaching Award* in Spring 2004.

Certificate Actuarial Exam, Part 2, Financial math

Research Interests

My research interests are in the realm of discrete mathematics. I have worked on a long standing problem in combinatorial geometry related to coloring of metric spaces and its variations, using methods from discrete geometry and probabilistic combinatorics. I also have worked on a distance graph problem on the set of integers that has a flavor of combinatorial number theory and coding theory. I also have various results on a central conjecture in $L(2,1)$ -labeling of graphs, a generalization of ordinary graph coloring motivated by the channel assignment problem.

In addition, I am interested in and working on other problems from combinatorial geometry, extremal graph theory, combinatorial number theory, and intersecting set-systems.

Papers and Publications

- Codes with bounded distances, and their applications to distance graphs, preprint, under revision. (with S. Anderson and H. Maharaj)
- Rectilinear equidistant sets in \mathbb{R}^d , *Geombinatorics*, 20 (2011) 151–167.
- Distance graphs from p-adic norms, *Integers—Electronic Journal of Combinatorial Number Theory*, 10 (2010) 379–392. (with H. Maharaj)
- Covering n -space by convex bodies and its chromatic number, *Discrete Mathematics, Special issue in honor of M. Simonovits*, 308 (2008), 4495–4500. (with Z. Füredi)
- $L(2,1)$ -labeling for Hamiltonian graphs of maximum degree 3, *SIAM Journal on Discrete Mathematics*, 22 (2008), 213–230.

- Distance graph on \mathbb{Z}^n with ℓ_1 -norm, *Theoretical Computer Science, Special issue on Combinatorics of the Discrete Plane and Tilings*, 319 (2004), 357–366. (with Z. Füredi)
- On largeness and accessibility, manuscript.
- Distance graphs on the integer line, manuscript. (with H. Maharaj)
- On the structure of p -adic distance graphs, manuscript. (with H. Maharaj)
- L(2,1)-labeling and packing of bipartite graphs, preprint. (with Z. Füredi)
- L(2,1)-labeling for Kneser Graphs, preprint.
- Security number for Kneser Graphs, preprint.

Presentations

- AMS Special Session on Graph Theory, *Invited talk*, National Meeting, San Diego, California, Jan. 2013
- Discrete Math Seminar, *Invited talk*, Trinity College, Hartford, Connecticut, April 2011
- KNU-PNU-PMI Algebraic Combinatorics Colloquium, *Invited talk*, Kyungbook National University, Dae-gu, South Korea, June 2010
- Graph Theory and Combinatorics Seminar, *Invited talk*, Georgia Southern University, Statesboro, Georgia Feb. 2010
- AMS Special Session on Graph Theory, *Invited talk*, National Meeting, San Diego, California, Jan. 2008
- Discrete Math Seminar, *Invited talk*, Georgia State University, Atlanta, Georgia, Nov. 2007
- Integers Conference, Carrollton, Georgia, Oct. 2007
- AMS Session on Graph Theory, *Invited talk*, Central Section Meeting, Chicago, Illinois, Oct. 2007
- Department Colloquium, *Invited talk*, Clemson University, March 2006
- Combinatorics Seminar, *Invited talk*, University of Florida, March 2006
- AMS National Meeting, San Antonio, Texas, Jan. 2006
- Midsummer Workshop on Extremal Combinatorics, *Invited talk*, Charles University, Prague, Czech Republic, Aug. 2005
- Graph Theory Seminar, *Invited talk*, Illinois State University, Feb. 2004
- AMS National Meeting, Phoenix, Arizona, Jan. 2004
- 17th MCCCC (Midwest Conference on Combinatorics, Cryptography, and Computing), Las Vegas, Nevada, Nov. 2003

- AMS Special Session in Graphs and Digraphs, Joint Central and Western Section Meeting, Boulder, Colorado, Oct. 2003
- Conference on Extremal Graph Theory, dedicated to the 60th birthday of Miklos Simonovits, Rényi Institute of Hungarian Academy of Sciences, Balaton, Hungary, June 2003
- MIGHTY meetings (Midwest Graph Theory Conference), Valparaiso, Indiana, Sep. 2003; Normal, Illinois, Sep. 2002

and

- Several talks at
 - University of West Georgia,
 - University of Central Florida,
 - University of Illinois at Urbana-Champaign, and
 - Rényi Institute of Hungarian Academy of Sciences, Budapest, Hungary

Academic Services

- REFEREE FOR THE JOURNALS : Journal of Combinatorial Optimization, Discrete Mathematics, Information Processing Letters, Integers–Electronic Journal of Combinatorial Number Theory, Theoretical Computer Science, Networks.
- CHAIR, AMS Session on Combinatorics, National Meeting, Phoenix, Arizona, Jan. 2004
- CO-HOST, Integers Conference, Carrollton, Georgia, Oct. 2007, Oct. 2009, Oct. 2011

Departmental Services

- Committees in
 - Facilities Committee, *Chair*, 2009 – 2012
 - Ad-Hoc Committee for Independent Studies – *Chair*, 2009/2010
 - Facilities Committee, 2006 – 2009
 - Strategic Planning Committee, 2008 – 2012
 - Graduate Committee, 2010 – 2012
 - Seminar/Colloquium, 2006 – 2012
 - Search Committee, 2007/2008, 2010/2011
 - Liaison to Honors College, 2006 – 2012
- Math Day (Annual math festivals for high school students and undergraduate students), 2007–2012
 - Co-organizing Undergraduate Math Competition: Compose Putnam-type problems, proctor, grade, and finalize the winners

- Co-organizing Ciphering Problem Session for high school participants: Make questions and regulate the sessions
- and*
- Various participation: Grade/Supervise Team Competitions, At the registration desk, etc.
- Counseling/Advising undergraduate and graduate math major students

University Services

- Committees in
 - Senate, Student Life, Fall 2010
 - Senate, Faculty and Administrative Staff Personnel, 2009/2010
- Thesis Committee Member for Christine James, Ed.S, Spring 2009

Professional Societies

- American Mathematical Society (AMS)
- Society for Industrial and Applied Mathematics (SIAM)