

Mong-Jen Kao

- CURRENT STATUS Visiting Student @ Institute for Theoretical Informatics, Karlsruhe Institute of Technology (KIT), Germany.
- CONTACT INFORMATION R.405 Algorithmic Theory and Application Lab,
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- RESEARCH INTERESTS Combinatorial Optimization, Algorithm Design, Graph Theory, Approximations, Computational Geometry
- EDUCATION **National Taiwan University**, Taipei, Taiwan.
- Ph.D. (in progress), Computer Science and Information Engineering
 - Adviser: Professor D.T. Lee
 - Area of Study: Graph Algorithm, Combinatorial Optimization
 - M.S., Computer Science and Information Engineering, June 2008
 - Thesis Topic: *Capacitated Domination Problem*
 - Adviser: Professor D.T. Lee
 - Area of Study: Graph Algorithm, Combinatorial Optimization
 - B.S., Computer Science and Information Engineering, June 2006
 - Minor in Mathematics
- AWARDS Institute of Information & Computing Machinery (IICM), Taiwan - A sister society of Association for Computing Machinery
- Master Thesis Award, 2008
- Ministry of Education, Taiwan (R.O.C.)
- Contest on Informatics for Senior High school students
 - 3rd-place-award, 1999
 - 1st-place-award, 2000
- ACADEMIC EXPERIENCE *Graduate* **September 2006 to present**
- *Research Experiences*
 - September (2010) - January(2012), visiting Karlsruhe Institute of Technology, Germany, under a NSC-DAAD-sponsored Ph.D Exchange Program (Sandwich Programme)
 - October - December (2009), visited Karlsruhe Institute of Technology, Germany, for a two-month collaborative joint research

- In charge of preparing and integrating the following project proposals
 - *Geometric Network Design and Multi-Criteria Optimization*
 - A regular multi-year research project (2009-2012) sponsored by NSC
 - Principal Investigator: Professor D.T. Lee
 - Project code: NSC98-2221-E-001-008-MY3
 - *On Communication Network and Geometric Sequence Processing*
 - A multi-year collaborative research project between Taiwan and Germany (2009-2012) sponsored by both NSC and DFG
 - Principal Investigator: Professor D.T. Lee
 - Co-PI: Professor Dr. Dorothea Wagner, Professor Dr. Rolf Klein
 - Project code: NSC98-2221-E-001-007-MY3

- *Academic Services*
 - Have served as a reviewer for the following conferences/journal: Journal of Discrete Algorithms, ICALP'11, COCOON'11, FAW'10, FAW'08, ISAAC'07.

- *Teaching Assistant, National Taiwan University*
 - Computational Geometry and Visualization
 - Spring 2010
 - Program Assignments, Final Project Assignments
 - Conduct a weekly 3-hour TA session

 - Discrete Mathematics
 - Fall 2008 and Fall 2009 (Best TA Award)
 - In charge of grading both the homework and midterm exams
 - Conduct a 2-hour TA session weekly

 - Computation Complexity and Approximation Algorithms
 - Spring 2009
 - In charge of grading the homework and projects

Undergraduate

September 2001 to June 2006

- Summer 2004, applied and studied courses in Combinatorics in the Summer School at the Institute of Mathematics, Academia Sinica (qualification required)
- 2004-2005, applied and executed the undergraduate research programme sponsored by NSC on dominating set and related problems

Senior High School

Before June 2001

- 1999 and 2000, participated in the domestic contest on Informatics for senior high school students, and obtained 3rd-place-award and 1st-place-award, respectively.

- PUBLICATIONS
- Mong-Jen Kao, D.T. Lee, and Dorothea Wagner. Approximating Metrics by Tree Metrics of Constant Distance-Weighted Average Stretch. *manuscript*, 2011.
- Mong-Jen Kao and D.T. Lee. Capacitated Domination: Constant Factor Approximations for Planar Graphs. *To appear in the 22nd International Symposium on Algorithms and Computation (ISAAC'11)*, Yokohama, Japan, 2011.
- Mong-Jen Kao, Bastian Katz, Marcus Krug, D.T. Lee, Martin Nöllenburg, Ignaz Rutter, and Dorothea Wagner. Connecting Two Trees with Optimal Routing Cost. *In proceedings of the 23rd Canadian Conference on Computational Geometry (CCCG'11)*, Toronto, Canada, 2011.
- Mong-Jen Kao, Bastian Katz, Marcus Krug, D.T. Lee, Ignaz Rutter, and Dorothea Wagner. Density Maximization Problem in Graphs. *In proceedings of the 17th Annual International Computing and Combinatorics Conference (COCOON'11)*, Dallas, TX, 2011.
- Mong-Jen Kao, Chung-Shou Liao, and D.T. Lee. Capacitated domination problem. *Algorithmica*, 60:274-300, 2011.
- Mong-Jen Kao and Han-Lin Chen. Approximation algorithms for the Capacitated Domination Problem. *In Proceedings of the 4th International Frontiers of Algorithmics Workshop (FAW'10)*, August 11-13, Wuhan, China, 2010. (*Best Student Paper Award*)
- Mong-Jen Kao, and Chung-Shou Liao. Capacitated domination problem. *In Proceedings of the 18th International Symposium on Algorithms and Computation (ISAAC'07)*, Sendai, Japan, 2007.
- DISSERTATION
- Mong-Jen Kao. *Capacitated domination problem*.
Master Dissertation, National Taiwan University, Taipei, Taiwan, 2008.