

EUNJUNG KIM

Department of Computer Science
Royal Holloway, University of London
Egham, Surrey
TW20 0EX, UK.

Phone: (+44) 1784 443436
Fax: (+44) 1784 439786
Email: eunjung@cs.rhul.ac.uk
Homepage: <http://www.cs.rhul.ac.uk/~eunjung/>

Research Interests
Graph Theory
Fixed-Parameter Tractability
Complexity Theory
Combinatorial Optimization
Linear / Integer Programming

Education
Ph.D candidate in Computer Science 2007 - present
Royal Holloway, University of London.

M.S. in Industrial Engineering 2003
Korea Advanced Institute of Science and Technology (KAIST).
Thesis Title: An Optimization Algorithm for the Two-Echelon Single-Source Capacitated Facility Location Problem

B.S. in Industrial Engineering 2001
Korea Advanced Institute of Science and Technology (KAIST).
Thesis Title: Case research on the decision of system design factor by mathematical modeling and simulation : About the decision of number of carts in need in a grocery

Professional Experience
Research Assistant (full-time) 2007 - present
Computer Science, Royal Holloway, University of London.
Have been working for EPSRC-funded project, titled "Parameterized Problems on Directed Graphs".

- Journal Articles**
1. G. Gutin, E. J. Kim, S. Szeider, A. Yeo
A Probabilistic Approach To Problems Parameterized Above Tight Lower Bound
To appear in *Journal of Computer and System Sciences* (2010).
 2. G. Gutin, E. J. Kim, M. Mnich, A. Yeo
Betweenness Parameterized Above Tight Lower Bound
To appear in *Journal of Computer and System Sciences* (2010).
 3. N. Alon, G. Gutin, E. J. Kim, S. Szeider, A. Yeo
Parameterized Max r-SAT Above Tight Guaranteed Lower Bound
To appear in *Algorithmica* (2010).
 4. G. Gutin, E. J. Kim, M. Lampis, V. Mitsou
Vertex Cover Problem Parameterized Above and Below Tight Bounds
To appear in *Theory of Computing Systems* (2010).
 5. N. Cohen, F. V. Fomin, G. Gutin, E. J. Kim, S. Saurabh, A. Yeo
Algorithm for Finding k-Vertex Out-trees and its Application to k-Internal Out-branching Problem
To appear in *Journal of Computer and System Sciences* (2010).

6. J. Daligault, G. Gutin, E. J. Kim, A. Yeo
FPT Algorithms and Kernels for the Directed k-Leaf Problem
Journal of Computer and System Sciences 76 (2), pp. 144-152 (2010).
7. G. Gutin, E. J. Kim
Complexity of the Minimum Cost Homomorphism Problem for Semicomplete Digraphs with Possible Loops
Discrete Applied Mathematics 158 (4), pp. 319-330 (2010).
8. P. Dunkelmann, G. Gutin, E. J. Kim
On the Complexity of Minimum Leaf Out-branching Problem
Discrete Applied Mathematics 157 (13), pp. 3000-3004 (2009).
9. G. Gutin, E. J. Kim, I. Razgon
Parameterized Minimum Leaf Out-branching Problems
Theoretical Computer Science 410 (45), pp. 4571-4579 (2009).
10. A. Gupta, G. Gutin, M. Karimi, E. J. Kim, A. Rafiey
Minimum Cost Homomorphisms to Locally Semicomplete and Quasi-transitive Digraphs
To appear in *Australasian Journal of Combinatorics*.
11. G. Gutin, E. J. Kim
Introduction to the Minimum Cost Homomorphism Problem for Directed and Undirected Graphs
Lecture Notes of Ramanujan Mathematical Society 7, pp. 25-37, 2008

Conference Proceedings

1. R. Crowston, G. Gutin, M. Jones, E. J. Kim, I.Z. Ruzsa
Lower Bounds for Maxima of Functions with Boolean Variables and Max Lin Above Average Problem
To appear in *SWAT2010*.
2. N. Alon, G. Gutin, E. J. Kim, S. Szeider, A. Yeo
Parameterized Max r-SAT Above Tight Guaranteed Lower Bound
Proceedings of the 21st Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2010).
3. G. Gutin, E. J. Kim, S. Szeider, A. Yeo
Probabilistic Approach To Problems Parameterized Above Tight Lower Bound
Proceedings of the 4th International Workshop on Parameterized and Exact Computation (IWPEC 2009).
4. N. Cohen, F. V. Fomin, G. Gutin, E. J. Kim, S. Saurabh, A. Yeo
Algorithm for Finding k-Vertex Out-trees and its Application to k-Internal Out-branching Problem
Proceedings of the 15th International Computing and Combinatorics Conference (COCOON 2009).
5. G. Gutin, E. J. Kim
Properly Coloured Cycles and Paths: Results and Open Problems
LNCS Proceedings of the conference honoring Martin Golumbic's 60th birthday, 2008.
6. A. Gupta, M. Karimi, E. J. Kim, A. Rafiey
Minimum Cost Homomorphisms to Locally In-semicomplete Digraphs
Proceedings of the 2nd Annual International Conference on Combinatorial Optimization and Applications (COCOA 2008).
7. G. Gutin, E. J. Kim, I. Razgon
Parameterized Minimum Leaf Out-branching Problems

Proceedings of the 4th International Conference on Algorithmic Aspects in Information and Management (AAIM 2008).

8. E. J. Kim, D. Kang, K. Lee, S. Park
An Optimization Algorithm for the Two-Echelon Single-Source Capacitated Facility Location Problem
Korean Institute of Industrial Engineers spring conference 2003.
9. E. J. Kim, D. Kang, K. Lee, S. Park
A Tabu Search Algorithm for the Two-Echelon Single-Source Capacitated Facility Location Problem
Korean Society for Supply Chain Management spring conference 2003.

Manuscripts

1. E. J. Kim, S. Ordyniak, S. Szeider
Complexity Results for Argumentation and Subjective Acceptance
Submitted to COMMA 2010 (2010).
2. G. Gutin, E. J. Kim, A. Soleimanfallah, S. Szeider, A. Yeo
Parameterized Complexity Results For General Factors in Bipartite Graphs
In preparation.
3. G. Gutin, E. J. Kim
Permutation CSP problems of any fixed arity parameterized above tight lower bounds are fixed-parameter tractable
In preparation.

Presentation

Seminar Talks

- Invited Seminar, Katholieke Universiteit Leuven, Belgium, May 2010.
- Discrete Mathematics Seminar, Korea Advanced Institute of Science and Technology (KAIST), Korea, December 2009.
- Discrete Optimization Seminar, Montpellier Laboratory of Informatics, Robotics, and Micro-electronics (LIRMM), Montpellier, France, September 2008.
- Discrete Mathematics Seminar, Korea Advanced Institute of Science and Technology (KAIST), Korea, April 2008.
- Computer Science Department Seminar, Royal Holloway, UK, April 2008.

Conference Talks

- SODA 2010, Austin, Texas, US, January 2010.
- IWPEC 2009, IT University of Copenhagen, Copenhagen, Denmark, September 2009.
- COCOON 2009, Niagara Falls, New York, US, July 2009.
- Postgraduate Combinatorial Conference 2009, Royal Holloway, UK, June 2009.
- British Colloquium for Theoretical Computer Science 2009, Warwick University, Coventry, UK, April 2009.
- AAIM 2008, Shanghai, China, June 2008.

Teaching Experience

Algorithms and Computational Complexity (Undergraduate Level)
Spring 2008, 2009 (50% of the course)
Computer Science, Royal Holloway.

**Programming
Experience**

Project : "Development of an optimization technique for the multi-echelon Location-Clustering Problem", funded by ETRI (Electronics and Telecommunications Research Institute, South Korea)
September 2002 - June 2003

- Designed an integer linear programming based exact algorithm and tabu search heuristic.
- Implemented JAVA software which processes real-world data using the heuristic.
- Built CPLEX-incorporated C software implementing the exact algorithm.

**Conference
Organization**

Organizer of 20th Postgraduate Combinatorial Conference
Royal Holloway, June 2009.

Refereeing

Discrete Optimization, IWPEC 2009, WG 2010, MFCS 2010, Discrete Applied Mathematics.

**Computer
Skills**

Languages: C/C++, JAVA, J, PYTHON, BASIC.