Curriculum Vitae

Chung-Shou Liao 廖崇碩

Assistant Professor,
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Education:

National Taiwan University, Taipei, Taiwan 2004 ~ 2009
Doctor of Philosophy, Computer Science and Information Engineering
Thesis: Graph-theoretic domination and related problems with applications. Advisor: Dr. D.T. Lee

National Chiao Tung University, HsinChu, Taiwan 1999 ~ 2001
Master of Science, Combinatorial Mathematics group, Applied Mathematics **(Rank 1)**
Thesis: *k*-Tuple domination in graphs. Advisor: Dr. G.J. Chang

Tatung University, Taipei, Taiwan 1995 ~ 1999
Bachelor of Science, Applied Mathematics

Professional Experience:

Institute of Information Science, **Academia Sinica**, Taiwan 2002 ~ 2009
Research Assistant, supervised by Dr. D.T. Lee.

- Algorithms and Computation Laboratory

Dept. of CSAIL, **Massachusetts Institute of Technology**, USA 2008 ~ 2009
Visiting Student, supervised by Prof. Bonnie Berger

- Systems biology: protein interaction network alignment

Dept. of Math, National University of Singapore, Singapore 2008 Spring
Visiting Student, supervised by Prof. Louxin Zhang

- Bioinformatics: genomic sequence alignment

Dept. of ECE, Carnegie Mellon University, USA 2007 Fall
Visiting Student, supervised by Prof. Tsuhan Chen

- Machine learning: probabilistic graphical model design and analysis

Research Interests:

Combinatorial optimization, bioinformatics, systems biology, graph algorithms, and computational geometry.

Honors and Awards:

1. Best Doctoral Thesis Award, IICM, 2009.
2. NSC Graduate Students Study Abroad Program, 2007 (NSC-096-2917-I-002-114).
3. Best Master Thesis Award, in Proceedings of Combinatorics Conference, 2001.
4. The 1st Rank Student Award, Graduate Institute of Applied Math, NCTU, 2001.

Scientific Activities:

[Conference Program Committee]

Int'l Conference on Contemporary Computing (IC3 2010), Int'l Conference on Computational and Systems Biology (ICCSB 2010).

[Conference Referee]

Int'l Symposium on Algorithms and Computation (ISAAC), Int'l Computing and Combinatorics Conference (COCOON), Int'l Workshop on Computational Geometry and Application (CGA), Int'l Symposiums on Voronoi Diagrams (ISVD), Int'l Frontiers of Algorithmics Workshop (FAW), Conference on Theory and Applications of Models of Computation (TAMC).

[Journal Referee]

Algorithmica, Bioinformatics, IEEE Transactions on Computers, Int'l Journal of Foundations of Computer Science, Int'l Journal of Computational Geometry & Applications, Discrete Applied Math., Information Processing Letters.

[Invited Talk]

<Nov.03.2010>. Inst. IE, National Taiwan University. *Location Problems in Large-scale Networks with Applications*.

<Sep.24.2010> Dept. Math, National University of Singapore. *Global alignment of Multiple Protein networks*.

<Jun.14.2010>. Dept. IEM, National Chiao Tung University. *Considering Optimization Problems from a Combinatorial Point of View*.

<Nov.04.2009>. Dept. Math, Fu Jen University. *Power domination in graphs*.

<Sep.29.2009>. Dept. Applied Math, National Chiao Tung University. *Power domination in graphs*.

Publication:

<Journal>

1. Daniel Park, Rohit Singh, Michael Baym, Chung-Shou Liao, and Bonnie Berger. IsoBase: a database of functionally related proteins across PPI networks, accepted by Nucleic Acids Research, 2010.

2. Chung-Shou Liao, Kanghao Lu, Michael Baym, Rohit Singh, and Bonnie Berger. *IsoRankN: Spectral methods for global alignment of multiple protein networks*, Bioinformatics, Vol 25 No. 12 (2009) pp. i253-i258.

3. Mong-Jen Kao, Chung-Shou Liao, and D. T. Lee. *Capacitated domination problem*, accepted by Algorithmica, 2009.

4. Yu-Shin Chen, D. T. Lee and Chung-Shou Liao. *Labeling points on a single line*, International Journal of Computational Geometry & Applications (IJCGA), Vol. 15, No. 3 (2005) pp. 261-277.

5. Chung-Shou Liao and G. J. Chang. *k-Tuple domination in graphs*, Inform. Process. Letters Vol 87, (2003) pp. 45-50.

6. Chung-Shou Liao and G. J. Chang. *Algorithmic aspect of k-tuple domination in graphs*, Taiwanese Journal of Math. Vol 6, No. 3 (2002) pp.415-420.

<Conference>

1. Leonid Chindelevitch, Chung-Shou Liao, and Bonnie Berger. *Local optimization for global alignment of protein interaction networks*, Pacific Symposium on Biocomputing (PSB 2010), Hawaii, U.S.A.

2. Chung-Shou Liao, Kanghao Lu, Michael Baym, Rohit Singh, and Bonnie Berger. *IsoRankN: Spectral methods for global alignment of multiple protein networks*, in Proceedings of the 17th International Conference on Intelligent Systems for Molecular Biology (ISMB 2009), Stockholm, Sweden (Acceptance Rate: 18%).

3. Chung-Shou Liao and Louxin Zhang. *Approximating the spanning k-tree forest problem*, in Proceedings of the third International Frontiers of Algorithmics Workshop (FAW 2009), Hefei, China (Accptance Rate: 36%)

4. Mong-Jen Kao, Chung-Shou Liao. *Capacitated domination problem*, in Proceedings of the 18th International Symposium on Algorithms and Computation (ISAAC 2007), Sendai, Japan (Acceptance Rate: 36%(77/212)).

5. Kuen-Lin Yu, Chung-Shou Liao and D. T. Lee. *Maximizing the number of independent labels in the plane*, in Proc. of the first International Frontiers of Algorithmics WorkShop (FAW 2007), Lanzhou, China (Acceptance Rate: 24%(35/143)).

6. Chung-Shou Liao and D. T. Lee, *Power domination problem in graphs*, in Proceedings of the 11th International Computing and Combinatorics Conference (COCOON 2005) Kunming, Yunnan, China (Acceptance Rate: 27%(96/353)).

7. D. T. Lee, Chung-Shou Liao, and Wei-Bung Wang. *Time-based Voronoi Diagram*, in Proceedings of the International Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2004), University of Tokyo, Hongo, Tokyo, Japan.

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