Zhentao Li

Education

2007-Present **McGill University** Ph.D. in Computer Science
Supervisor: Prof. Bruce Reed and Prof. Adrian Vetta
Expected graduation: August 2011

2006-2007 **University of Waterloo** M.Math in Combinatorics and Optimization
Supervisor: Prof. Bertrand Guenin
Thesis title: Algebraic methods for reducibility in nowhere zero flows.

2003-2006 **McGill University** B.Sc. Honours Mathematics and Computer Science
Graduated with First Class Honours on the Dean's Honour List
GPA 3.90/4.0

Research Interests

My main research is in graph theory, specifically **structural graph theory** and **graph algorithms**. This includes the theory of **graph minors** and **graphs excluding an induced subgraph**. I am also interested in problems in the design and analysis of **algorithms, combinatorial optimization**, other branches of **combinatorics** and **theoretical computer science**.

Scholarships

- NSERC (Natural Science and Engineering Research Council of Canada) CGS D3 (2007-2010)
- FQRNT B2 (1st place out of 11) (2009) (Declined)
- Milton Leong Fellowship (2008)
- McGill Recruitment Excellence Fellowship (2007)
- NSERC CGS M (2006)
- UW President's Graduate Scholarship (2006)
- FQRNT B1 (3rd place out of 27) (2006) (Declined)
- Undergraduate Research Prize (2nd place out of 18) (2006)
- NSERC USRA (2004, 2005, 2006)
- Edward Beatty Memorial Scholarship in Mathematics (2004)
- Courtemanche Scholarship runner up (2nd place out of 14) (2004)
- Bourse LACIM-CIRGET (2003)

Honours and awards

- Best student paper award at WG 2009 for *Graph Partitioning and Traffic Grooming with Bounded Degree Request Graph* (with I.Sau)
- Dean's Honour List (top 10% in the faculty) (McGill, 2003, 2006)
- Euclid contest school champion (ranked in top 1%) (2003)
- American Mathematics Competition Certificate of Distinction (2002, 2003)
- Canadian Open Mathematics Challenge Certificate of Distinction (top 25%) (2002)

Refereed Publications

1. K. Kawarabayashi, Z. Li and B. Reed. (2009) **Recognizing a totally odd K_4-subdivision, parity 2-disjoint rooted paths and a parity cycle through specified elements**, *Proceedings of SODA 2010*
2. Z. Li and A. Vetta. (2009) **Bounds on the cleaning times of robot vacuums**, *Operations Research Letters*, 38(1): 69-71
3. Z. Li and I. Sau. (2009) **Graph Partitioning and Traffic Grooming with Bounded Degree Request Graph**, In *Proceedings of the 35th International Workshop on Graph-Theoretic Concepts in Computer Science (WG)*
   Best student paper (full version of this paper is submitted to *SIAM Journal on Discrete Mathematics*)
4. B. Reed and Z. Li. (2008) **Optimization and recognition for K_5-minor free graphs in linear time**, In *Proceedings of LATIN 2008*, pages 206-215. (full version of this paper was submitted to Algorithmica)
5. L. Addario-Berry, W. S. Kennedy, A. D. King, Z. Li, B. A. Reed. (2008) **Finding maximum weighted induced k-partite graphs in i-triangulated graphs**, accepted to *Discrete Applied Mathematics*, 158: 765-770
6. L. Chindelevitch, Z. Li, E. Blais, and M. Blanchette. (2006) **On the inference of parsimonious indel evolutionary scenarios**, *J. Bioinform. Comput. Biol.*, 4(3):721-744
7. Z. Li and B. A. Reed. (2005) **Heap Building Bounds**, In *Proceedings of the 9th International Workshop on Algorithms and Data Structures*, pages 14 - 23

Publications in preparation

1. M. Narayanan, Z. Li and A. Vetta. (2010) **Simultaneous Clustering, Algorithms and complexity**
2. R. Kapadia, Z. Li and B. Reed. (2009) **Faster algorithms for the 2-disjoint paths problem**

Presentations

- ACM-SIAM Symposium on Discrete Algorithms (2010)
- Bertinoro Workshop on Algorithms and Graphs (2009)
- Presentation at the University of Tokyo (2009)
- McGill School of Computer Science's Prelude seminar (2008)
- BIRS Graph Minors Workshop (2008)
- University of Waterloo Masters Thesis Presentation (2007)
- CANADAM 2007 (Graph Minors Mini-symposium)
- University of Waterloo Graduate Seminar (2007)
- Workshop on Algorithms and Data Structures 2005
- Poster presentation at the Faculty of Science's Undergraduate Research Conference (2005)
- McGill's School of Computer Science Summer Undergraduate Research Symposium (2004, 2005, 2006)
- Canadian Undergraduate Mathematics Conference (2005, 2006).

Articles refereed

- Journal of Combinatorial Theory, Series B
- Discrete Optimization
- Journal of Graph Theory

Work experience

2010	Organizer for McGill's Discrete Mathematics and Optimization seminar McGill Discrete Mathematics Group
2010-2011	Organizer for the student meeting and problem session McGill Discrete Mathematics Group
2009-2010	Coach for McGill's ACM ICPC team McGill School of Computer Science
Winter 2007	Research Assistant Univ. of Waterloo Dept. of Combinatorics & Optimization Supervisor: Prof. Bertrand Guenin
Winter 2007	Co-founder and organizer for the open problem session Univ. of Waterloo Dept. of Combinatorics & Optimization
Summer 2006	Research Assistantships (NSERC USRA) McGill School of Computer Science Supervisor: Prof. Bruce Reed
Summer 2005	Research Assistant (NSERC USRA) McGill Centre for Bioinformatics Supervisor: Prof. Mathieu Blanchette
Summer 2004	Research Assistantships (NSERC USRA) McGill School of Computer Science Supervisor: Prof. Bruce Reed
Summer 2003	Research Trainee (Bourse LACIM-CIRGET) Université du Québec à Montréal Supervisor: Prof. André Joyal

Teaching experience

Winter 2010	Course Lecturer for MATH 363 Discrete Math for Engineers McGill Department of Mathematics
Fall 2009	Teaching Assistant for COMP 251 Data Structures and Algorithms McGill School of Computer Science
Fall 2006	Teaching Assistant for CO 350 Linear Optimization Univ. of Waterloo Dept. of Combinatorics & Optimization
Fall 2004 - Winter 2006	Math Helpdesk Tutor McGill Department of Mathematics