Zhentao Li

Education

2013-Present **École Normale Supérieure** Assistant professor (*titularisé 09/2014*)
at the Computer Science Department (DI)
Theory, Algorithms, topoLogy, Graphs, and Optimization team

2012-2013 **École Normale Supérieure de Lyon** Postdoc
at Laboratoire de l'Informatique du Parallélisme
Supervisor : Prof. Stéphan Thomassé

2007-2011 **McGill University** Ph.D. in Computer Science
Supervisor : Prof. Bruce Reed and Prof. Adrian Vetta
Thesis title : Tree decompositions and linear time algorithms

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

I'm interested in **structural graph theory** and **graph algorithms**. This includes the theory of **graph minors** and **graphs excluding an induced subgraph**. I've recently been looking at more **graph colouring** problems. I am also interested in problems in the design and analysis of **algorithms, combinatorial optimization**, other branches of **combinatorics** and **theoretical computer science**.

Refereed Publications

1. N. Bousquet, A. Lagoutte, Z. Li, A. Parreau and S. Thomassé. **Identifying codes in hereditary classes of graphs and VC-dimension**, *SIAM Journal on Discrete Mathematics*, 29(4), 2047-2064
2. N. Bousquet, Z. Li and A. Vetta **Coalition Games on Interaction Graphs : A Horticultural Perspective**. *EC 2015*, 95-112
3. P. Aboulker, Z. Li and S. Thomassé. **Excluding clocks**. *LAGOS 2015*
4. C. Figueiredo, Z. Li, H. M. Filho, R. Machado and N. Trotignon. **Using SPQR-trees to speed up algorithms based on 2-cutset decompositions**. *LAGOS 2015*
5. H. Hu, Z. Li, A. Vetta **Randomized Experimental Design for Causal Graph Discovery**. *NIPS 2014*, 2339-2347
6. V. Cohen-Addad, Z. Li, C. Mathieu, I. Milis **Energy-Efficient Algorithms for Non-preemptive Speed-Scaling**. *WAOA 2014*, 107-118
7. N. Delfosse, Z. Li and S. Thomassé (2014) **A note on the minimum distance of quantum LDPC codes**, *MFCS 2014*, 239-250.
8. M. Narayanan, Z. Li and A. Vetta. **The complexity of the simultaneous cluster problem**, *JGAA*, 18(1) : 1–34

9. M. Baïou, L. Beaudou, Z. Li, and V. Limouzy. (2013) **Recognizing facility locations graphs is hard**, In *Proceedings of ISAAC 2013*, 196–206.
10. A. Gyárfás, Z. Li, R. Machado, A. Sebő, S. Thomassé and N. Trotignon. (2013) **Complements of nearly perfect graphs**, *Journal of Combinatorics*, 4(3) : 299–310
11. P. Keevash, Z. Li, B. Mohar, and B. A. Reed. (2012) **Digraph girth via chromatic number**, *SIAM Journal on Discrete Mathematics*, 27(2) : 693-696.
12. K. Kawarabayashi, Z. Li and B. Reed. (2010) **Recognizing a totally odd K_4-subdivision, parity 2-disjoint rooted paths and a parity cycle through specified elements**, *Proceedings of SODA 2010*, 318–328
13. Z. Li and A. Vetta. (2009) **Bounds on the cleaning times of robot vacuums**, *Operations Research Letters*, 38(1) : 69-71
14. 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)*, 250–261
    Best student paper (full version of this paper appears in *SIAM Journal on Discrete Mathematics*)
15. B. Reed and Z. Li. (2008) **Optimization and recognition for K_5-minor free graphs in linear time**, In *Proceedings of LATIN 2008*, 206–215.
16. L. Addario-Berry, W. S. Kennedy, A. D. King, Z. Li, and B. A. Reed. (2008) **Finding maximum weighted induced k-partite graphs in i-triangulated graphs**, *Discrete Applied Mathematics*, 158 : 765—770
17. 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
18. Z. Li and B. A. Reed. (2005) **Heap Building Bounds**, In *Proceedings of the 9th International Workshop on Algorithms and Data Structures*, 14 – 23

Publications submitted

1. J. Chalopin, L. Esperet, Z. Li and P. Ossona de Mendez **Restricted frame graphs and a conjecture of Scott**, *submitted*.
2. K. Kawarabayashi, Z. Li and B. Reed **Connectivity Preserving Iterative Compaction and Finding 2 Disjoint Rooted Paths in Linear Time**, *submitted*.

Articles refereed

- Journal of Combinatorial Theory, Series B
- Discrete Optimization
- Journal of Graph Theory
- SIAM Journal on Discrete Mathematics
- SIAM Journal on Computing
- Discrete Applied Mathematics
- Discrete Mathematics
- Integer Programming and Combinatorial Optimization (conference)
- ACM-SIAM Symposium on Discrete Algorithms (conference)

Scholarships

- FQRNT (Fonds de recherche du Québec - Nature et technologies) B3 (2012-2014)
- 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)

Administrative duties

2013-2015	"Secrétaire pédagogique" for the entry contest Computer Science Department (DI), ENS
2013-2015	International students selection committee Computer Science Department (DI), ENS
2013-2014	Organising first years master internships Computer Science Department (DI), ENS

Teaching experience

Fall 2015	Course Lecturer for Combinatorial and convex optimization Département d'informatique, École Normale Supérieure
Fall 2013-2015	"Chargé de TDs" for Algorithms and programming Département d'informatique, École Normale Supérieure
Winter 2014, 2016	Course Lecturer for Introduction to programming for non-computer scientists Département d'informatique, École Normale Supérieure
Fall 2013	Guest lecturer for Algorithms for embedded graphs Département d'informatique, École Normale Supérieure