

## Hanmeng (Harmony) Zhan

---

CONTACT	Department of Combinatorics and Optimization	h3zhan@uwaterloo.ca
INFORMATION	University of Waterloo	519-888-4567 ×37813
	200 University Ave W, Waterloo, ON N2L 3G1	hanmengzhan.com

RESEARCH  
INTERESTS Algebraic Graph Theory, Quantum Walks

EDUCATION **University of Waterloo**, Waterloo, ON, Canada

- Ph.D. Student May 2014 - Present  
Department of Combinatorics and Optimization, Faculty of Mathematics  
Supervisor: Chris Godsil
- Master of Mathematics Sept 2012 - Apr 2014  
Department of Combinatorics and Optimization, Faculty of Mathematics  
Thesis: *Uniform Mixing on Cayley Graphs over  $\mathbb{Z}_3^d$*   
Supervisor: Chris Godsil
- Bachelor of Arts Jan 2010 - Aug 2012  
Department of Economics, Faculty of Arts  
Thesis: *Second-Price Auction with Resale*  
Supervisor: Philip Curry

**Xiamen University**, Xiamen, Fujian, China

- Bachelor of Economics Sept 2008 - Jun 2014  
Department of Statistics, Faculty of Economics  
Thesis: *Multi-Player Multi-State Quantum Games*  
Supervisor: Zhengming Qian

PUBLICATIONS **Journal Publications**

1. G. Coutinho, C. Godsil, M. Shirazi, H. Zhan, *Equiangular Lines and Covers of the Complete Graph. Equiangular Lines and Covers of the Complete Graph*. Linear Algebra and its Applications (2016) 488: 264-283.
2. R. Alvir, S. Dever, B. Lovitz, J. Myer, C. Tamon, Y. Xu, H. Zhan. *Perfect State Transfer in Laplacian Quantum Walk*. Journal of Algebraic Combinatorics (2016) 43(4): 801-826.

**Preprints**

3. C. Godsil, H. Zhan, *Uniform Mixing on Cayley Graphs*. arXiv:1504.00721 (2015).

**In Preparation**

4. C. Godsil, H. Zhan, *Discrete-Time Quantum Walks and Graph Structures*.
5. C. Godsil, H. Zhan, *Mixing Time of Quantum Walks*.

## PRESENTATIONS **Conference Talks**

1. *Lines and Covers of Complete Graphs* 2. In : Systems of Lines: Applications of Algebraic Combinatorics, Worcester Polytechnic Institute, Worcester, MA, United States, August 10 - 14, 2015.
2. *Uniform Mixing in Continuous-Time Quantum Walks*. In: Summer Combo, Saint Michael's College, Burlington, VT, United States, July 21, 2015.
3. *Uniform Mixing in Quantum Walks*. In: 22nd Ontario Combinatorics Workshop, York University, Toronto, ON, Canada, May 16 - 17, 2014.

## **Invited Talks**

4. *Some Open Problems in Uniform Mixing*. In: Summer Research Program, Clarkson University, Potsdam, NY, United States, July 20, 2015.
5. *Uniform Mixing on Cayley Graphs*. In: Grad Seminar, University of Waterloo, Waterloo, ON, Canada, Oct 8, 2014.

## **Seminar Talks**

6. *Laplacian Perfect State Transfer*. In: Algebraic Graph Theory Seminar, University of Waterloo, Waterloo, ON, Canada, Sept 16, 2014.

## WORKING EXPERIENCE

- Teaching Assistant 2012 – 2015  
Graph Theory, Algebraic Enumeration, Coding Theory  
Special Topics in Mathematical Connections, Portfolio Optimization Models,  
Calculus for Honours Mathematics, Linear Algebra for Honours Mathematics
- Research Assistant 2014 – 2015  
Continuous-Time Quantum Walks, Uniform Mixing, Periodic Vertices

## AWARDS AND DISTICTIONS

### **University of Waterloo**

- Outstanding Achievement in Graduate Studies 2015
- Cotton Family Women in Mathematics Graduate Scholarship 2014, 2016
- Nominated for the Best TA Award 2014
- Faculty of Arts Upper-Year Scholarship 2011-2012
- Robin K. Banks Scholarship 2011-2012
- Dean's Honours List 2011-2012

### **Xiamen University**

- First-Class Scholarship 2009-2010