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RESEARCH INTERESTS Algebraic Graph Theory, Quantum Walks

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

- Ph.D. Candidate 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

RESEARCH EXPERIENCE

### Publications

1. G. Coutinho, C. Godsil, M. Shirazi, H. Zhan, *Equiangular Lines and Covers of the Complete Graph*; 25 pages. arXiv:1504.00085 (2015). Submitted to Linear Algebra and its Applications.
2. C. Godsil, H. Zhan, *Uniform Mixing on Cayley Graphs*; 23 pages. arXiv:1504.00721 (2015). To be submitted to the International Journal of Linear Algebra.
3. R. Alvir, S. Dever, B. Lovitz, J. Myer, C. Tamon, Y. Xu, H. Zhan. *Perfect State Transfer in Laplacian Quantum Walk*; 26 pages. arXiv:1409.5840 (2014). Submitted to Journal of Algebraic Combinatorics.
4. C. Godsil, H. Zhan, *Mixing Time of Quantum Walks*. In preparation.

## Presentations

1. *Lines and Covers of Complete Graphs 2*. In : Systems of Lines: Applications of Algebraic Combinatorics, Worcester Polytechnic Institute, Worcester, MA, 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. *Some Open Problems in Uniform Mixing*. Invited talk in: Summer Research Program, Clarkson University, Potsdam, NY, United States, July 20, 2015.
4. *Uniform Mixing on Cayley Graphs*. Invited talk in: Grad Seminar, University of Waterloo, Waterloo, ON, Canada, Oct 8, 2014.
5. *Laplacian Perfect State Transfer*. In: Algebraic Graph Theory Seminar, University of Waterloo, Waterloo, ON, Canada, Sept 16, 2014.
6. *Uniform Mixing in Quantum Walks*. In: 22nd Ontario Combinatorics Workshop, York University, Toronto, ON, May 16 - 17, 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

## AWARDS AND DISTICTIONS

### University of Waterloo

- Outstanding Achievement in Graduate Studies Spring 2015
- Cotton Family Women in Mathematics Graduate Scholarship Spring 2014
- Nominated for the Best TA Award Winter 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