

# Curriculum Vitae

## SWEE HONG CHAN

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### Education/Employment

- 2014 – **Ph.D** student in Mathematics, Cornell University, expected May 2019 (advisor: Lionel Levine)
- 2014 – 2016 **M.S.** (Special) in Mathematics, Cornell University
- 2012 – 2014 Research Assistant, Nanyang Technological University (mentor: Dmitrii V. Pasechnik)
- 2008 – 2012 **B. Sc.** in Mathematical Sciences, Nanyang Technological University (with Honors)

### Awards and Fellowships

- 2017-2018 Robert John Bättig Graduate Prize, awarded to a Cornell graduate student based on excellence and promise in mathematics
- 2014 Cornell Graduate Student Recruiting Fellowship
- 2012 The Singapore Mathematical Society Gold Medal and Book Prize, Nanyang Technological University, for best overall performance in Bachelor of Science (Mathematics)
- 2009 – 2012 International Mathematical Competition for University Students, First Prize (2012), Second Prize (2010,2011), Honorable Mention (2009)
- 2008 – 2012 ASEAN Scholarship, Nanyang Technological University

### Research interests

Probability and discrete mathematics

### Publications

9. Swee Hong Chan, Lionel Levine, *Abelian networks IV. Dynamics of nonhalting networks*, to appear in *Memoirs of the American Mathematical Society*, 95 pp. [arXiv:1804.03322](https://arxiv.org/abs/1804.03322)
8. Swee Hong Chan, *A bijection between necklaces and multisets with divisible subset sum*, *The Electronic Journal of Combinatorics* 26(1)(2019), P1.37, 18 pp. [Link](#)
7. Swee Hong Chan, *Abelian sandpile model and Biggs-Merino polynomial for directed graphs*, *Journal of Combinatorial Theory, Series A* 154 (2018), 145-171. [arXiv:1412.4837](https://arxiv.org/abs/1412.4837)
6. Marcelo Aguiar, Swee Hong Chan, *Toric arrangements associated to graphs: extended abstract*, *Séminaire Lotharingien de Combinatoire* 78B(2017), Art. 84, 12 pp. [Link](#)
5. Swee Hong Chan, *Quasi-periodic tiling with multiplicity: a lattice enumeration approach*, *Discrete and Computational Geometry* 54 (2015) pp. 647-662. [arXiv:1405.6928](https://arxiv.org/abs/1405.6928)
4. Swee Hong Chan, Henk D.L. Hollmann and Dmitrii V. Pasechnik, *Sandpile groups of generalized de Bruijn and Kautz graphs and circulant matrices over finite fields*, *Journal of Algebra* 421(0):268-295,2015. [arXiv:1405.0113](https://arxiv.org/abs/1405.0113)

### ArXiv preprints

3. Swee Hong Chan, *A rotor configuration with maximum escape rate*, 6 pp. [arXiv:1810.12784](https://arxiv.org/abs/1810.12784)
2. Swee Hong Chan, *Rotor walks on transient graphs and the wired spanning forest*, 32 pp. [arxiv:1809.09790](https://arxiv.org/abs/1809.09790)
1. Swee Hong Chan, Lila Greco, Lionel Levine, Peter Li, *Random walks with local memory*, 29 pp. [arXiv:1809.04710](https://arxiv.org/abs/1809.04710)

**Talks**

- 2018 Nov. Duke Probability Seminar, Durham, USA, *Random walks with local memory in the square lattice*
- 2018 Sep. Penn/ Temple Probability Seminar, Philadelphia, USA, *In between random walk and rotor walk in the square lattice*
- 2018 June Fifth IMS Asia Pacific Rim Meeting (IMS-APRM), Singapore, Singapore, *In between random walk and rotor walk in the square lattice*
- 2018 April Graduate Student Combinatorics Conference, Dallas, USA. *Necklaces and subset-sums: How can they be related?*
- 2018 March Princeton Topics in Probability Seminar, Princeton, USA. *In between random walk and rotor walk in the square lattice*
- 2017 Nov. Binghamton Combinatorics Seminar, Binghamton, USA. *Toric arrangements that come from graphs*
- 2017 Nov. 2017 Northeast Probability Seminar, New York City, USA. *Random walks with local memory on the square lattice*
- 2017 Aug. Pacific Rim Mathematical Association (PRIMA) Third Congress, Oaxaca, Mexico. *Toric arrangements that come from graphs*
- 2017 July The 29th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2017), London, UK. *Toric arrangements associated to graphs*
- 2017 April Finger Lakes Probability Seminar, Syracuse, USA. *Random walks with local memory on the square lattice*
- 2017 April Graduate Student Combinatorics Conference, Kansas, USA. *Toric graphic arrangements*
- 2015 Nov. Banff International Research Station Workshop on Sandpile Groups, Oaxaca, Mexico. *Abelian networks and a weak version of Merino's theorem*
- 2015 May Connections in Discrete Mathematics, Vancouver, BC, Canada. *Greedoid polynomial, chip-firing, and G-parking function for directed graphs*
- 2013 Sep. The Seventh European Conference on Combinatorics, Graph Theory and Applications (Eurocomb 2013), Pisa, Italy. *Critical groups of generalized de Bruijn and Kautz graphs and circulant matrices over finite fields*

**Teaching activities**

- 2018 Fall Probability Theory I (MATH 6710), teaching assistant, at Cornell University
- 2018 Spring Probability Theory II (MATH 6720), teaching assistant, at Cornell University
- 2017 Fall Calculus II (MATH 1120), instructor, at Cornell University
- 2017 Spring Applicable Algebra (MATH 3360), teaching assistant, at Cornell University
- 2016 Spring Probability Theory II (MATH 6720), teaching assistant, at Cornell University
- 2015 Fall Linear Algebra for Engineers (MATH 2940), teaching assistant, at Cornell University
- 2014 Spring Mathematical Problem Solving (MH9000), instructor, at Nanyang Technological University
- 2013 Fall Calculus III (MH2100), teaching assistant, at Nanyang Technological University
- 2013 Spring Calculus II (MH1101), teaching assistant, at Nanyang Technological University
- 2012 Fall Calculus for the Science I (MH1800), teaching assistant, at Nanyang Technological University

**Organizing activities**

- 2017 – Co-organizer (with Lionel Levine, Philippe Sosoe, and Pierre Patie): [Cornell Probability Seminar](#)

**Referee and review activities**

## Journals refereed

Advances in Applied Mathematics

Discrete and Computational Geometry

Discrete Applied Mathematics

Discrete Mathematics

Journal of Theoretical Probability

Linear Algebra and its Applications

Proceedings of the National Academy of Sciences

The Australasian Journal of Combinatorics

Transactions of the American Mathematical Society

## Conferences refereed

Formal Power Series and Algebraic Combinatorics (FPSAC) 2017