Weiming Feng

SCHOOL OF INFORMATICS
UNIVERSITY OF EDINBURGH

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CURRENT POSITIONS

Research Associate in School of Informatics (2021 – now)   UNIVERSITY OF EDINBURGH

EDUCATION

Ph.D. in Computer Science (2016 – 2021)   NANJING UNIVERSITY
Field: Theoretical Computer Science
Advisor: Professor Yitong Yin

B.Eng. in Network Engineering (2012 – 2016)   UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA

RESEARCH INTERESTS

Theoretical Computer Science:

- sampling & counting algorithms;

- distributed graph algorithms.

HONORS

National Scholarship (2019)	MOE OF PRC
Microsoft Research Asia Fellowship (2018)	MSRA
Tung OOCL Scholarship (2017)	NANJING UNIVERSITY
Gold Medals in ACM-ICPC Asia Regional Contests (2014-2015)	ACM

PUBLICATIONS

CONFERENCE PUBLICATIONS

1. Xiaoyu Chen, Weiming Feng, Yitong Yin, Xinyuan Zhang. Rapid mixing of Glauber dynamics via spectral independence for all degrees. In *Proceedings of the 62nd IEEE Symposium on Foundations of Computer Science (**FOCS**)*, 2021.

2. Weiming Feng, Kun He and Yitong Yin. Sampling constraint satisfaction solutions in the local lemma regime. In *Proceedings of the 53rd ACM Symposium on Theory of Computing (**STOC**)*, 2021.

3. Weiming Feng, Heng Guo, Yitong Yin and Chihao Zhang. Rapid mixing from spectral independence beyond the Boolean domain. In *Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (**SODA**)*, 2021.

4. Weiming Feng, Thomas P. Hayes and Yitong Yin. Distributed Metropolis sampler with optimal parallelism. In *Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (**SODA**)*, 2021.

5. Weiming Feng, Kun He, Xiaoming Sun and Yitong Yin. Dynamic inference in probabilistic graphical models. In *Proceedings of the 12th Innovations in Theoretical Computer Science (**ITCS**)*, 2021.

6. Weiming Feng, Heng Guo, Yitong Yin and Chihao Zhang. Fast sampling and counting k-SAT solutions in the local lemma regime. In *Proceedings of the 52nd ACM Symposium on Theory of Computing (**STOC**)*, 2020.

7. Weiming Feng, Nisheeth K. Vishnoi and Yitong Yin. Dynamic sampling from graphical models. In *Proceedings of the 51st ACM Symposium on Theory of Computing (**STOC**)*, 2019.

8. Weiming Feng and Yitong Yin. On local distributed sampling and counting. In *Proceedings of the 37th ACM Symposium on Principles of Distributed Computing (PODC)*, 2018.

9. Weiming Feng, Yuxin Sun and Yitong Yin. What can be sampled locally? In *Proceedings of the 36th ACM Symposium on Principles of Distributed Computing (PODC)*, 2017.

JOURNAL PUBLICATIONS

10. Weiming Feng, Heng Guo, Yitong Yin and Chihao Zhang. Fast sampling and counting k-SAT solutions in the local lemma regime. *Journal of the ACM (JACM)* 68 (6), 1-42, 2021.

11. Weiming Feng, Nisheeth K. Vishnoi and Yitong Yin. Dynamic sampling from graphical models. *SIAM Journal on Computing (SICOMP)*, 50(2), 350–381. 2021.

12. Weiming Feng, Yuxin Sun and Yitong Yin. What can be sampled locally? *Distributed Computing (DC)*, 33, 227–253. 2020.

PREPRINTS

13. Xiaoyu Chen, Weiming Feng, Yitong Yin, Xinyuan Zhang. Optimal mixing time for the Ising model in the uniqueness regime. *arXiv preprint arXiv:2111.03034*, 2021.

14. Weiming Feng, Heng Guo and Yitong Yin. Perfect sampling from spatial mixing. *arXiv preprint arXiv:1907.06033*, 2019.

15. Weiming Feng, Thomas P. Hayes and Yitong Yin. Distributed Symmetry Breaking in Sampling (Optimal Distributed Randomly Coloring with Fewer Colors). *arXiv preprint arXiv:1802.06953*, 2018.

TALKS AND POSTERS

Rapid mixing of Glauber dynamics via spectral independence for all degrees.

> Chengdu Algorithm & Logic Seminar, UESTC, Chengdu, China, 2021

Rapid mixing from spectral independence beyond the Boolean domain.

> SODA, online, 2021

Distributed Metropolis sampler with optimal parallelism.

> SODA, online, 2021

Fast sampling and counting k-SAT solutions in the local lemma regime.

> SIGMA Seminar, Institute of Computing Technology, Chinese Academy of Sciences, online, 2020
> STOC, online, 2020
> IJTCS, Peking University, online, 2020

Dynamic sampling from graphical models

> Nanjing Theory Day, Nanjing University, Nanjing, China, 2019
> STOC, Phoenix, Arizona, US, 2019
> NCTCS, Lanzhou University, Lanzhou, China, 2019
> Microsoft PhD Summit, Microsoft Research Redmond, Redmond, Washington, US, 2019

Local distributed sampling

> Microsoft Research Asia, Beijing, China, 2018

TEACHING ASSISTANTSHIPS

Advanced Algorithms (Fall 2019)   NANJING UNIVERSITY
Instructor: Yitong Yin

Advanced Algorithms (Fall 2018)   NANJING UNIVERSITY
Instructor: Yitong Yin

RESEARCH VISITS

University of Edinburgh, Edinburgh, UK   SEPT. 2019 -- DEC. 2019
Visiting student, advised by Heng Guo

Shanghai Jiao Tong University, Shanghai, China   SEPT. 2018 -- JAN. 2019
Visiting student, advised by Chihao Zhang

SERVICE

External reviewer for: STOC, SICOMP, IPL.
Organizer (with Xiaoming Sun, Jialin Zhang and Zhijie Zhang) of CCF TCS PhD Forum 2020.