

Contact

Email: nxc233@psu.edu

Homepage: www.cse.psu.edu/~nxc233

Address: W342 Westgate building, The Pennsylvania State University, University Park, PA, 16802

Research interests

- Quantum algorithms, computational complexity (quantum interactive proof in particular), quantum cryptography, quantum machine learning.

Education

- **The Pennsylvania State University, University Park**
Ph.D., Computer Science and Engineering
August 2012 - present.
Adviser: Sean Hallgren
Fields: Quantum Algorithms/Complexity/Quantum Cryptography
- **National Taiwan University**
Bachelor, Computer Science and Information Technology
August 2006 - May 2010.

Employment

- Research Assistant: August 2013 - present
Department of Computer Science and Engineering,
The Pennsylvania State University, University Park
- Teaching Assistant: August 2012 - December 2012 and August 2016 - December 2016
Department of Computer Science and Engineering,
The Pennsylvania State University, University Park
- Research Assistant: July 2011 - July 2012
Research Center for Information Technology Innovation,
Academic Sinica, Taiwan
- Research Assistant: June 2009 - May 2010
Department of Computer Science and Information Technology
National Taiwan University, Taiwan

Publications

- **Basing one-way permutations on NP-hard problems under quantum reductions**
Authors: Nai-Hui Chia, Sean Hallgren, Fang Song
In submission.
- **How hard is deciding trivial versus nontrivial in the dihedral coset problem?**
Authors: Nai-Hui Chia and Sean Hallgren
In Proceedings of the 11th Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC2016)
- **Quantum blind computation with teleportation-based computation**
Authors: Nai-Hui Chia, Chia-Hung Chien, Wei-Ho Chung, Sy-Yen Kuo
In Proceedings of the Ninth International Conference on Information Technology: New Generations (ITNG2012)
- **On bundle configuration for viral marketing in social networks**
Authors: De-Nian Yang, Wang-Chien Lee, Nai-Hui Chia, Mao Ye, Hui-Ju Hung
In Proceedings of the 21st ACM international conference on Information and knowledge management (CIKM2012)

Talks and Presentations

- Conference Presentations
 - **Basing one-way permutations on NP-hard problems under quantum reductions**
Poster in QIP2018, Delft, January 2018
 - **How hard is deciding trivial versus nontrivial in the dihedral coset problem?**
Talk in TQC2016, Berlin, September 2016
Poster in QIP2016, Banff, January 2016
 - **Quantum Blind Computation with Teleportation-based Computation**
Talk in ITNG2012, Las Vegas, 2012
- Invited Talks
 - **How hard is deciding trivial versus nontrivial in the dihedral coset problem?**
 - * IQC, University of Waterloo, Nov. 2015
 - * Academic Sinica, December 2015
 - **Quantum worst-case to average-case reductions for QMA-complete**
 - * Academic Sinica, December 2016
 - **Introduction to quantum computing**
 - * Yahoo Taiwan, June 2016
 - **Quantum computers - a view from computer science**
 - * Innovation and Interdisciplinary Collaboration Community Workshop, The Pennsylvania State University, November 2013

Professional activities

- Co-organizer of streaming algorithm seminar at the Pennsylvania State University
May 2015 - July 2015
- Conference and Journal reviewer for: PQC2017, QIP2017, CCC2017, Asiacrypt2017, FOCS2017, ISAAC15, PKC2018

Travel Grants

- NSF Travel Grant, QIP 2018 (833 USD)
- NSF Travel Grant, QIP 2016 (800 USD)
- Student Travel Stipend, PQCrypto 2014 summer school (1000 CDN)

Teaching

- **Teaching assistant of CMPSC464: Introduction to Theory of Computation**,
Department of CSE, Pennsylvania State University, Fall 2016/Spring 2018
Duties: weekly recitation sessions; help design homework, exam problems and exercises in recitation sessions; office hours; grading.
- **Teaching assistant of CMPEN 331: Computer Organization and Design**,
Department of CSE, Pennsylvania State University, Fall 2012
Duties: help design homework and exam problems, office hours; grading.

References

- **Sean Hallgren** (Adviser)
Professor, Department of Computer Science and Engineering, Pennsylvania State University
Email: hallgren@cse.psu.edu
Phone: +1 (814) 863-1265
Homepage: www.cse.psu.edu/~hallgren
- **Fang Song**
Assistant Professor, Computer Science Department, Portland State University
Email: fang.song@pdx.edu
Phone: +1 503-725-4060
Homepage: fangsong.info
- **Kai-Min Chung**
Associate Research Fellow, Institute of Information Science, Academia Sinica
Email: kmchung@iis.sinica.edu.tw
Homepage: <http://www.iis.sinica.edu.tw/~kmchung/>