

Xue Chen

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RESEARCH INTEREST

Algorithms for big data — sparse recovery and fast Fourier transform; foundations of machine learning and data science; complexity theory; randomized algorithms and pseudorandomness.

PREVIOUS ACADEMIC POSITIONS

Assistant Professor in Department of Computer Science, George Mason University (of USA) August 2020 - July 2021

Postdoctoral fellow in Computer Science, Northwestern University (of USA) June 2018 - July 2020
Host: Prof. Anindya De, Prof. Konstantin Makarychev, and Prof. Aravindan Vijayaraghavan.

EDUCATION

Ph.D. in Computer Science, the University of Texas at Austin April 2018
Advisor: Prof. David Zuckerman

B.S. in Computer Science, Tsinghua University July 2011
Special Pilot Computer Science Class (supervised by Prof. Andrew Chi-Chih Yao)

PUBLICATIONS

1. Xue Chen and Michał Dereziński.
Query Complexity of Least Absolute Deviation Regression via Robust Uniform Convergence.
In Conference on Learning Theory (COLT) 2021.
2. Pranjal Awasthi, Vaggos Chatziafratis, Xue Chen, and Aravindan Vijayaraghavan.
Adversarially Robust Low Dimensional Representations.
In Conference on Learning Theory (COLT) 2021.
3. Pranjal Awasthi, Xue Chen, and Aravindan Vijayaraghavan.
Estimating Principal Components under Adversarial Perturbations.
In Conference on Learning Theory (COLT) 2020.
4. Xue Chen, Anindya De, and Rocco A. Servedio.
Testing noisy linear functions for sparsity.
In ACM Symposium on Theory of Computing (STOC) 2020.
5. Xue Chen and Anindya De.
Reconstruction under outliers for Fourier-sparse functions.
In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2020.
6. Xue Chen and Eric Price.
Estimating the Frequency of a Clustered Signal.
In the 46th International Colloquium on Automata, Languages and Programming (ICALP) 2019.

7. Xue Chen and Eric Price.
Active Regression via Linear-Sample Sparsification.
In Conference on Learning Theory (COLT) 2019.
8. Xue Chen and David Zuckerman.
Existence of Simple Extractors.
Manuscript, available at <https://eccc.weizmann.ac.il/report/2018/116/>.
9. Xue Chen.
Derandomized Balanced Allocation.
In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2019.
10. Xue Chen and Yuan Zhou.
Parameterized Algorithms for Constraint Satisfaction Problems Above Average with Global Cardinality Constraints.
In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2017.
11. Xue Chen, Daniel M. Kane, Eric Price, and Zhao Song.
Fourier-sparse interpolation without a frequency gap.
In the 57th Annual Symposium on Foundations of Computer Science (FOCS 2016).
12. Xue Chen.
Integrality Gaps and Approximation Algorithms for Dispersers and Bipartite Expanders.
In ACM-SIAM Symposium on Discrete Algorithms (SODA) 2016.
13. Xue Chen, Guangda Hu, Pinyan Lu and Lei Wang.
On the Approximation Ratio of k-Lookahead Auction.
In the 7th International Workshop on Internet and Network Economics (WINE 2011).
14. Xue Chen, Guangda Hu and Xiaoming Sun.
The Almost Tight Upper Bound of Exact Linear Threshold Boolean Function in Low Dimension.
In the 8th Annual Conference on Theory and Applications of Models of Computation (TAMC 2011).
15. Xue Chen, Guangda Hu and Xiaoming Sun.
The Complexity of Word Circuits.
In the 16th Annual International Computing and Combinatorics Conference (COCOON 2010).

TALKS

1. **Active Regression via Linear-Sample Sparsification** in SIAM Mathematics of Data Science 2020.
2. **Robust algorithms against adversarial noise** in University of Virginia, George Washington university, Dartmouth college, University of Rochester, March 2020.
3. **Robust algorithms against adversarial noise** in Penn State university, Oregon State university, George Mason university, University of Texas at Dallas, Feb 2020.
4. **Reconstruction under outliers for Fourier-sparse functions** in the 70th Midwest Theory day at Illinois Institute of Technology, November 2019.
5. **Sparse Fourier transform in the continuous setting** in CS theory seminar at University of Illinois at Chicago, November 2019.
6. **Sparse Fourier transform in the continuous setting** in CS theory seminar at Northwestern University, November 2019.
7. **Active Regression via Linear-Sample Sparsification** in COLT 2019 at Phoenix.
8. **Active Regression via Linear-Sample Sparsification** in CS theory seminar at Johns Hopkins University, February 2019.

9. **Derandomized Balanced Allocation** in SODA 2019 at San Diego, California, January 2019.
10. **Derandomized Balanced Allocation** in CS theory seminar at Northwestern University, October 2018.
11. **Existence of Simple Extractors** in the reunion workshop of Pseudorandomness at the Simons institute of Berkeley, June 2018.
12. **Fourier-sparse interpolation without a frequency gap** in China Theory Week at Shanghai University of Finance and Economics, July 2017.
13. **Parameterized Algorithms for Constraint Satisfaction Problems Above Average with Global Cardinality Constraints** in SODA 2017 at Barcelona, Spain.
14. **Integrality Gaps and Approximation Algorithms for Dispersers and Bipartite Expanders** in SODA 2016 at Arlington, Virginia.

AWARDS

- MCD Fellowship from academic year 2011 to 2014 at UT Austin.
- Excellent student intern award in Microsoft Research Asia, 2011.
- Xuetao Fellowship, Tsinghua University, 2010
- Second Prize Scholarship for Freshman in Tsinghua University, 2008.
- Gold medal (top 20) in National Olympiad in Informatics of China, 2006.
- First Prize in National Competition of Mathematics in Hunan, China, 2005.

TEACHING EXPERIENCE

- Instructor in George Mason University* Fall semester, 2020
- CS 600 Theory of Computation, CS 630 Advanced Algorithms.
- Instructor in Northwestern University* Fall quarter, 2019
- CS 496 Graduate Complexity.
- Teaching Assistant in the University of Texas at Austin* Sep. 2011 - May 2018
- Undergraduate courses: CS 311 Analysis of Programs, CS 331 Algorithms and Complexity, CS 361 Introduction to Computer Security, and CS 378 Randomized Algorithms.
 - Graduate courses: CS 388C Combinatorics and Graph Theory and CS 388R Randomized Algorithms.

RESEARCH VISITS

- Program of Pseudorandomness January, 2017 - May, 2017
Visited the Simons institute for the Theory of Computing at Berkeley

References

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