

Eric Price

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Work Experience

- 8/2014– **University of Texas at Austin**, *Austin, TX*, Assistant Professor of Computer Science.
- 1/2014– **IBM Almaden Research Center**, *San Jose, CA*, Postdoctoral researcher.
8/2014
- 9/2013– **Simons Institute for the Theory of Computing**, *Berkeley, CA*, Postdoctoral
12/2013 research fellow.
- 6/2012– **Microsoft Research**, *Cambridge, MA*, Research intern.
8/2012 Research on streaming algorithms and coding theory.
- 6/2011– **IBM Research**, *Almaden, CA*, Research intern.
8/2011 Research with David P. Woodruff. Simplified lower bounds for compressive sensing.
- 6/2010– **Google**, *New York, NY*, Research intern.
8/2010 Developed theoretical justification for a heuristic used in large scale machine learning.

Education

- 9/2009– **PhD in Computer Science**, *Massachusetts Institute of Technology*.
9/2013 Research Advisor: Prof. Piotr Indyk, MIT CSAIL.
Thesis: *Sparse Recovery and Fourier Sampling*.
- 9/2010 **Master of Engineering in Electrical Engineering and Computer Science**,
Massachusetts Institute of Technology.
Research Advisor: Prof. Piotr Indyk, MIT CSAIL.
Thesis: *Algorithms and Lower Bounds for Sparse Recovery*
- 9/2005– **Bachelor of Science in Computer Science and Engineering**
6/2009 **Bachelor of Science in Mathematics**, *Massachusetts Institute of Technology*.
Departmental GPAs: 5.0/5.0 (each); overall GPA: 4.9/5.0.

Awards

George M. Sprowls Award for best computer science doctoral thesis at MIT.

One of two recipients, 2013

Simons Graduate Fellowship in Theoretical Computer Science.

Fellowship recipient, 2012

NSF Graduate Research Fellowship Program.

Fellowship recipient, 2009

ACM International Collegiate Programming Contest.

8th place team, 2009 World Finals, Stockholm, Sweden

4th place team, 2007 World Finals, Tokyo, Japan

William Lowell Putnam Mathematics Competition.

6-15 place bracket, 2006

7-16 place bracket, 2005

International Olympiad in Informatics.

Perfect score, 2005, Nowy Sacz, Poland

Silver medal, 2004, Athens, Greece

International Mathematical Olympiad.

Gold medal, 2005, Merida, Mexico

Papers

- **The Noisy Power Method: A Meta Algorithm with Applications.** Moritz Hardt and Eric Price. Manuscript.
- **Sharp bounds for learning a mixture of two Gaussians.** Moritz Hardt and Eric Price. Manuscript.
- **(Nearly) sample-optimal sparse Fourier transform.** Michael Kapralov, Eric Price, and Piotr Indyk. SODA 2014.
- **New constructions of RIP matrices with fast multiplication and fewer rows.** Jelani Nelson, Eric Price, and Mary Wootters. SODA 2014.
- **Improved Concentration Bounds for Count-Sketch.** Gregory T. Minton and Eric Price. SODA 2014 (**Best Student Paper**).
- **Sparse Recovery and Fourier Sampling.** Eric Price. Ph.D. Thesis.
- **Sample-Optimal Average-Case Sparse Fourier Transform in Two Dimensions.** Badih Ghazi, Haitham Hassanieh, Piotr Indyk, Dina Katabi, Eric Price, and Lixin Shi. Allerton 2013.
- **Lower Bounds for Adaptive Sparse Recovery.** Eric Price and David P. Woodruff. SODA 2013.
- **Applications of the Shannon-Hartley Theorem to Data Streams and Sparse Recovery.** Eric Price and David P. Woodruff. ISIT 2012.
- **Nearly Optimal Sparse Fourier Transform.** Haitham Hassanieh, Piotr Indyk, Dina Katabi, and Eric Price. STOC 2012.
- **Simple and Practical Algorithm for Sparse Fourier Transform.** Haitham Hassanieh, Piotr Indyk, Dina Katabi, and Eric Price. SODA 2012.
- **On the Power of Adaptivity in Sparse Recovery.** Piotr Indyk, Eric Price, and David P. Woodruff. FOCS 2011.
- **$(1 + \epsilon)$ -approximate sparse recovery.** Eric Price and David P. Woodruff. FOCS 2011.
- **K-Median Clustering, Model-Based Compressive Sensing, and Sparse Recovery for Earth Mover Distance.** Piotr Indyk and Eric Price. STOC 2011.
- **Compressive Sensing with Local Geometric Features.** Rishi Gupta, Piotr Indyk, Eric Price, and Yaron Rachlin. SOCG 2011.
- **Efficient Sketches for the Set Query Problem.** Eric Price. SODA 2011.
- **Sparse Recovery for Earth Mover Distance.** Rishi Gupta, Piotr Indyk, and Eric Price. Allerton (invited paper) 2010.
- **Lower Bounds for Sparse Recovery.** Khanh Do Ba, Piotr Indyk, Eric Price, and David P. Woodruff. SODA 2010.
- **Confluently Persistent Tries for Efficient Version Control.** Erik Demaine, Stefan Langerman, and Eric Price. SWAT 2008.
- **Browser-Based Attacks on Tor.** Timothy G. Abbott, Katherine J. Lai, Michael R. Lieberman, and Eric C. Price. PET 2007.

Talks

- Workshop on Sublinear Algorithms, Bertinoro, Italy. *Learning Mixtures of Gaussians*, May 2014.
- Library of Congress, Washington, DC. *NewsDiffs: Tracking Online News Over Time*, February 2014.
- IBM Research Almaden, San Jose, CA. *Improved Concentration Bounds for Count-Sketch*, February 2014.
- SODA, Portland, OR. *Improved Concentration Bounds for Count-Sketch*, January 2014.
- Simons Institute, Berkeley, CA. *Sparse Fourier Transforms: Optimizing Time and Sample Complexity*, December 2013.
- Duke University, Durham, NC. *Sparse Fourier Transforms: Optimizing Time and Sample Complexity*, December 2013.
- Duke University, Durham, NC. *Improved Concentration Bounds for Count-Sketch (and more)*, December 2013.
- Stanford University, Stanford, CA. *Fourier Sampling and Beyond*, October 2013.
- Coding, Complexity, and Sparsity Workshop, Ann Arbor, MI. *Sparse Recovery and Fourier Sampling*, August 2013.
- University of Texas, Austin, TX. *Fast RIP matrices with fewer measurements*, April 2013.
- University of Texas, Austin, TX. *Fourier Sampling and Beyond*, April 2013.
- South by Southwest, Austin, TX. *NewsDiffs: Tracking Online News Over Time*, March 2013.
- Weizmann Institute of Science, Rehovot, Israel. *Adaptive Sparse Recovery*, December 2012.
- Coding, Complexity, and Sparsity Workshop, Ann Arbor, MI. *Improved Concentration Bounds for Count-Sketch*, August 2012.
- Workshop on Streaming Algorithms, Dortmund, Germany. *Nearly Optimal Sparse Fourier Transform*, July 2012.
- ISIT, Cambridge, MA. *Applications of the Shannon-Hartley Theorem to Data Streams and Sparse Recovery*, July 2012.
- STOC, New York, NY. *Nearly Optimal Sparse Fourier Transform*, May 2012.
- Carnegie Mellon University, Pittsburgh, PA. *Nearly Optimal Sparse Fourier Transform*, April 2012.
- Carnegie Mellon University, Pittsburgh, PA. *Adaptive Sparse Recovery*, April 2012.
- Johns Hopkins University, Baltimore, MD. *On the Power of Adaptivity in Sparse Recovery*, February 2012.
- SODA, Kyoto, Japan. *Simple and Practical Algorithm for Sparse Fourier Transform*, January 2012.
- SIAM Minisymposium on Computational Geometry, Boston, MA. *Geometric Aspects of Compressive Sensing*, January 2012.
- Berkeley University, Berkeley, CA. $(1 + \epsilon)$ -approximate sparse recovery, November 2011.
- FOCS, Palm Springs, CA. *On the Power of Adaptivity in Sparse Recovery*, October 2011.

- Coding, Complexity and Sparsity Workshop, Ann Arbor, MA. *On the Power of Adaptivity in Sparse Recovery*. August 2011.
- IBM Research, Almaden, CA. *On the Power of Adaptivity in Sparse Recovery*. June 2011.
- STOC, San Jose, CA. *K-Median Clustering, Model-Based Compressive Sensing, and Sparse Recovery for Earth Mover Distance*, June 2011.
- Microsoft Research New England, Cambridge, MA. *Survey on Compressive Sensing*, May 2011.
- IBM Research, Almaden, CA. *Efficient Linear Sketches for Sparse Recovery*. January 2011.
- SODA, San Francisco, CA. *Efficient Sketches for the Set Query Problem*, January 2011.
- Bar Ilan University, Ramat Gan, Israel. *Efficient Linear Sketches for Sparse Recovery*. December 2010.
- Technion, Haifa, Israel. *Efficient Linear Sketches for Sparse Recovery*. December 2010.
- Google Research Seminar, New York, NY. *Efficient Linear Sketches for Sparse Recovery*. July 2010.
- SODA, Austin, TX. *Lower Bounds in Compressed Sensing*. January 2010.
- CSAIL Student Workshop, Gloucester, MA. *Lower Bounds in Compressed Sensing*. September 2009.
- Center for Massive Data Algorithmics (MADALGO), Aarhus, Denmark. *Lower Bounds in Compressed Sensing*. April 2009.
- CSAIL Student Workshop, Gloucester, MA. *Fully Persistent Hash Tables*. September 2008.
- SWAT, Gothenburg, Sweden. *Confluently Persistent Tries for Efficient Version Control*. July 2008.

Other Projects

6/2012– **NewsDiffs**.

Developed a service to monitor changes to news stories on websites such as the New York Times and CNN. Cited by the New York Times' Public Editor when discussing controversial edits. See <http://www.newsdiffs.org/>.

10/2007– **SIPB XVM service**.

10/2008 Developed a service to allow MIT students to create and manage virtual machines through web- and command-line interfaces. Managed 200+ virtual machines for 100+ users. See <http://xvm.mit.edu/>.

Teaching

Fall 2014 **Sublinear Algorithms**, Graduate topics class.

Fall 2008 **Teaching Assistant for 6.02**, *Introduction to EECS II*.