Eric Price

Education

 9/2009-current Pursuing a PhD in Computer Science, Massachusetts Institute of Technology. Research Advisor: Prof. Piotr Indyk, MIT CSAIL. Expected graduation: 6/2013. Interests: sparse recovery, compressive sensing, algorithms, data structures.
9/2010 Master of Engineering in Electrical Engineering and Computer Science, Massachusetts Institute of Technology.

Thesis: Algorithms and Lower Bounds for Sparse Recovery. Supervised by Piotr Indyk.

9/2005–6/2009 Bachelor of Science in Computer Science and Engineering Bachelor of Science in Mathematics, *Massachusetts Institute of Technology*. Departmental GPAs: 5.0/5.0 (each); overall GPA: 4.9/5.0.

Awards

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

Work Experience

- 6/2012–8/2012 **Microsoft Research**, *Cambridge*, *MA*, Research intern. Research on streaming algorithms and coding theory.
- 6/2011–8/2011 **IBM Research**, *Almaden, CA*, Research intern. Research with David P. Woodruff. Simplified lower bounds for compressive sensing.
- 6/2010–8/2010 **Google**, *New York*, *NY*, Research intern. Developed theoretical justification for a heuristic used in large scale machine learning.
- 6/2007–8/2007 **Google**, *Mountain View, CA*, Software engineering intern. Examined risk associated with Google Checkout and Adwords transactions.

6/2006–8/2006 **D. E. Shaw**, *New York, NY*, Quant intern. Worked on evaluating models to analyze risk in a stock portfolio.

Papers

- 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

- 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/.

10/2007–10/2008 SIPB XVM service.

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 2008

Teaching Assistant for 6.02, Introduction to EECS II.

Taught introductory signal processing, coding theory, and network routing. Responsibilities included teaching recitations, holding office and lab hours, and writing homework solutions.