

**Lee-Ad Gottlieb**  
**The Rachel and Selim Benin School of Computer Science and Engineering**  
**The Hebrew University of Jerusalem.**  
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## POSITIONS

- Postdoctoral Fellow      The Rachel and Selim Benin School of Computer Science and Engineering  
The Hebrew University of Jerusalem.  
October 2010 – present.  
Hosts: Yair Bartal and Yuval Rabani.  
*Golda Meir fellow.*
- Postdoctoral Fellow      Department of Computer Science and Applied Mathematics  
Weizmann Institute of Science, Rehovot Israel.  
October 2008 – October 2010.  
Host: Robert Krauthgamer.

## EDUCATION

- Sc.B.                      Applied Mathematics – Computer Science, *with honors*  
Brown University, Providence RI. May 2002.  
Honors thesis, “*de Novo* Peptide Sequencing via Tandem Mass Spectrometry.”  
Advisor: Franco P. Preparata  
GPA: 3.90/4.00.
- M.Sc.                      Computer Science  
New York University, New York NY. January 2006.
- Ph.D.                      Computer Science  
New York University, New York NY. January 2009.  
Advisor: Richard Cole.

## RESEARCH INTERESTS

- Machine learning in metric spaces.
- Algorithms and data structures for metrics of low intrinsic dimension.
- Dimension reduction techniques.
- Detecting underlying sparsity in permuted matrices.

## PUBLICATIONS

- Bartal Y, Gottlieb L, Krauthgamer R. “The traveling salesman problem: low-dimensionality implies a polynomial time approximation scheme.”  
*STOC 2012.*
- Gottlieb L, Kontorovich A, Krauthgamer R. “Efficient regression in metric space via approximate Lipschitz extension.”  
Submitted.
- Bartal Y, Gottlieb L. “Dimension reduction techniques for  $l_p$ ,  $1 < p < \infty$ .”  
Submitted.
- Gottlieb L, Kontorovich A, Mossel E. “VC bounds on the cardinality of nearly orthogonal function classes.”  
*Discrete Mathematics*, 312 (2012):1766-1775.

Bartal Y, Gottlieb L, Roditty L, Kopelowitz T, Lewenstein M. “Fast, precise and dynamic distance queries.” *SODA 2011*, 840-853.

Gottlieb L, Krauthgamer R. “A Nonlinear Approach to Dimension Reduction.” *SODA 2011*, 888-899.

Gottlieb L, Krauthgamer R. “Proximity algorithms for nearly-doubling spaces.” *APPROX 2010*, 192-204.

Gottlieb L, Neylon T. “Matrix sparsification and the sparse null space problem.” *APPROX 2010*, 205-218.

Gottlieb L, Kontorovich A, Krauthgamer R. “Efficient classification for metric data” *COLT 2010*, 433-440.

Gottlieb L. “Proximity Problems for Point Sets with Low Doubling Dimension.” Ph.D. Thesis, New York University, 2009.

Gottlieb L, Roditty L. “An optimal dynamic spanner for doubling metric spaces.” *ESA 2008*, 478-489.

Gottlieb L, Roditty L. “Improved algorithms for fully dynamic geometric spanners and geometric routing.” *SODA 2008*, 591-600.

Cole R, Gottlieb L. “Searching dynamic point sets in spaces with bounded doubling dimension.” *STOC 2006*, 574-583.

Gottlieb L, Savage JE, Yerukhimovich A. “Efficient data storage in large nanoarrays.” *Theory of Computing Systems* 38(4):503-536, 2005.

Cole R, Gottlieb L, Lewenstein M. “Dictionary matching and indexing with errors and don’t cares.” *STOC 2004*, 91-100.

Gottlieb S, Gottlieb L. “Strong stability preserving properties of Runge-Kutta time discretization methods for linear constant coefficient operators.” *Journal of Scientific Computing* 18(1): 83-109, Feb. 2003.

## **PROFESSIONAL ACTIVITY**

### *Presentations*

“Dictionary matching and indexing with errors and don’t cares.”  
Symposium on Theory of Computing, May 2004.  
Brown University, April 2007.

“Searching dynamic point sets in spaces with bounded doubling dimension.”  
New York University, April 2006.  
Symposium on Theory of Computing, May 2006.  
Bar Ilan University, June 2010.

“An Optimal Dynamic Spanner for Doubling Metric Spaces.”  
European Symposium on Algorithms, September 2008.  
Weizmann Institute of Science, May 2009.

“A survey of nearest neighbor search problems.”  
University of Massachusetts, April 2009.

“A nonlinear approach to dimension reduction.”  
Tel Aviv University, January 2010.  
Hebrew University, January 2010.  
New York University, April 2010.  
Ben Gurion University, May 2010.  
Symposium on Discrete Algorithms, January 2011.

“Efficient classification for metric data”  
Conference on Learning Theory, June 2010.  
University of Haifa, December 2010.  
Interdisciplinary Center Herzliya, December 2010.  
Ben Gurion University, January 2011.  
Tel Aviv University, March 2011.  
Ariel University Center, February 2012.  
IBM Research Tel Aviv, March 2012.

“Matrix sparsification and the sparse null space problem”  
Approx, September 2010.

“Proximity algorithms for nearly-doubling spaces.”  
Approx, September 2010.

“Fast, precise and dynamic distance queries.”  
Weizmann Institute, December 2010.  
Symposium on Discrete Algorithms, January 2011.

“The traveling salesman problem.”  
Technion, December 2011.  
Tel Aviv University, January 2012.  
Bar Ilan University, February 2012.  
Ben Gurion University, February 2012.

“Nearest neighbor search for image databases.”  
Ben Gurion University, February 2012.  
Yahoo! Labs Haifa, March 2012.

### *Refereeing*

APPROX  
European Symposium on Algorithms  
Computational Learning Theory  
Symposium on Discrete Algorithms  
Theory and Applications of Models of Computation  
Computational Geometry: Theory and Applications  
International Journal of Computational Geometry and Applications  
Information Processing Letters  
SIAM Journal on Discrete Mathematics  
SIAM Journal on Computing  
Theoretical Computer Science  
Theory of Computing

### *Teaching*

Data Communications and Networks. Teacher’s Assistant: Responsibilities included grading and office hours.  
Introduction to Computer Science II. Teacher’s Assistant: Responsibilities included grading and lab hours.

### **COLLABORATORS**

Yair Bartal, Hebrew University (Postdoc host)  
Richard Cole, NYU (Ph.D. advisor)  
Sigal Gottlieb, UMass and Brown University  
Aryeh Kontorovich, Ben Gurion University

Tsvi Kopelowitz, Weizmann Institute  
Robert Krauthgamer, Weizmann Institute (Postdoc host)  
Moshe Lewenstein, Bar Ilan University  
Elchanan Mossel, Weizmann Institute  
Tyler Neylon, Bynomial Inc.  
Liam Roditty, Bar Ilan University  
John E. Savage, Brown University  
Arkady Yerukhimovich, University of Maryland