

# Ron Rubinstein



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E-mail	ronrubin@cs.technion.ac.il	Date of birth	08/08/1980
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## CURRENT OCCUPATION

2006- Direct Ph.D. Student, Computer Science Department, Technion – Israel Institute of Technology.  
Thesis title: Analysis and Synthesis Methods for Inverse Problem Regularization.  
Advisor: Prof. Michael Elad.

Lecturer, “Introduction to Computer Science”.

## EDUCATION

2007 IPAM Short Course on Sparse Representation and High Dimensional Geometry, May 2007.  
2006 Ph.D. Candidacy Exam, Technion – Israel Institute of Technology.  
2002 B.Sc. in Computer Science, Hebrew University in Jerusalem. Summa cum Laude.  
1998 High school diploma, “Katzir” high school, Rehovot. Special prize for excellence.  
1996 Graduate of the “Michael” project for personal excellence.

## WORK EXPERIENCE

2009- Consultant, Sharp Laboratories of America, Camas WA.  
2008 Research intern, Sharp Laboratories of America, Camas WA.  
2002-2003 Computer science and physics instructor, eTeacher Ltd.  
2000-2001 Software engineer, Mempile Ltd. (part-time).

## TEACHING EXPERIENCE

2007- Lecturer, “Introduction to Computer Science”.  
Recipient of the lecturer's commendation for excellence in teaching, 2008, 2009.

2005-2007 Senior teaching assistant, "Introduction to Computer Science" (Spring '05, Winter '05-6, Winter '06-7).  
Recipient of the Teaching Assistant's Excellence Award, 2006.

2003-2005 Teaching assistant, "Introduction to Computer Science"  
2002-2003 Computer science and physics instructor, eTeacher Ltd. Student ranking 5/5.

## AWARDS AND HONORS

2008,2009 Lecturer's commendation for excellence in teaching, Technion IIT.  
2007 Full scholarship, IPAM Short Course on Sparse Representation, May 2007  
2005 Teaching Assistant's Excellence Award, Technion IIT  
2002 B.Sc., The Hebrew University in Jerusalem, Summa cum Laude.  
1998-2002 Full scholarship, The Hebrew University in Jerusalem.  
1998-2001 Dean's List, The Hebrew University in Jerusalem.  
1998-2001 Dean's Award for excellence, The Hebrew University in Jerusalem.  
1998 Excellence award from the Mayor of Rehovot, “Katzir” high school.

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## PROJECTS

- 2009-2010 *Sparse-representation-based image compression (supervisor, ongoing)*  
Development of an image compression technique based on sparse and redundant signal representation.
- 2009 *Texture segmentation via overcomplete dictionaries (supervisor)*  
Development of a texture segmentation method which uses adaptive overcomplete dictionaries.
- 2006 *Superresolution under complex motion models (supervisor)*  
Implementation of a regularized Total-Variation-based superresolution algorithm and its extension to complex motion models.
- 2006 *Fusion of differently exposed images – implementation in C++ (supervisor)*  
Implementation of the image fusion algorithm in C++. Developed under Microsoft Visual Studio 2005.
- 2005 *Automatic cropping of tagged area (supervisor)*  
Stable and efficient algorithm for fully-automatic detection of rectangular cropping regions in a scanned image; regions are tagged by two high-contrast labels.
- 2004 *Fusion of differently exposed images*  
Multiscale-based method for fusing differently exposed (and not necessarily aligned) images of the same scene. Implemented in MATLAB.

## PUBLICATIONS

- Rubinstein, R. and Segall, A. (2010) *Automatic Fusion of Differently-Exposed Color Images for Enhanced Dynamic Range Imaging*. Draft.
- Rubinstein, R., Bruckstein, A.M. and Elad, M. (2010) *Dictionaries for Sparse Representation Modeling*. Proceedings of the IEEE, Vol. 98, No. 6, June 2010.
- Rubinstein, R., Zibulevsky, M. and Elad, M. (2010) *Learning Sparse Dictionaries for Sparse Signal Approximation*. IEEE Transactions on Signal Processing, Vol. 58, No. 3, March 2010.
- Segall, A. Zhao, J. and Rubinstein, R. (2009) *Video Coding for the Mobile Capture of Higher Dynamic Range Image Sequences*. PCS 2009, Chicago, Illinois, May 2009.
- Rubinstein, R., Zibulevsky, M. and Elad, M. (2008) *Efficient Implementation of the K-SVD Algorithm using Batch Orthogonal Matching Pursuit*. Technical Report – CS Technion, April 2008.
- Elad, M., Milanfar, P. and Rubinstein, R. (2007) *Analysis versus Synthesis in Signal Priors*. IOP Inverse Problems, Vol. 23, No. 3, June 2007.
- Elad, M., Milanfar, P. and Rubinstein, R. (2006) *Analysis versus Synthesis in Signal Priors*, EUSIPCO 2006, Florence, Italy, September 2006.

## SOFTWARE

- OMP-Box: Implementation of the Batch-OMP algorithm for quick sparse-coding of large sets of signals.  
KSVD-Box: Efficient implementations of the K-SVD, Approximate K-SVD, and K-SVD Denoising algorithms.  
KSVDs-Box: Efficient implementation of the Sparse K-SVD and Sparse K-SVD Denoising algorithms.

## ACTIVITIES AND AVOCATIONS

- Sailing (licensed skipper)  
Photography  
Music (piano playing)  
Volunteer, Israel Cancer Association  
Volunteer, Etagarim – Israel Outdoor Sports and Recreation Association for the Disabled
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