

## Curriculum Vitae - Michal Rosen-Zvi

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Dr. Michal Rosen-Zvi  
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The Hebrew University of Jerusalem  
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### **Postdoctoral Fellow**

January 2005- Computer Science, Hebrew University  
Advisors: Prof. Tali Tishby and Dr. Yair Weiss  
2003-4 Information & Computer Science, UC Irvine  
Advisors: Professor Padhraic Smyth and Professor Max Welling  
2002-3 Computer Science Division, UC Berkeley  
Advisor: Professor Michael I. Jordan

### **Education:**

2003 PhD in Physics  
Dissertation: "Learning from examples in complex networks"  
Advisor: Prof. Ido Kanter, Bar-Ilan University, Israel  
1996 M.Sc. magna cum laude in physics  
Thesis: "Aspects of Photon Migration in Biological Tissues"  
Advisor: Prof. Haim Taitelbaum, Bar-Ilan University, Israel  
1994 B.Sc. magna cum laude in expanded physics, Bar-Ilan University, Israel

### **Publications:**

The DLR Hierarchy of Approximate Inference  
Michal Rosen-Zvi, Michael I. Jordan and Alan L. Yuille  
Proceedings of Uncertainty in Artificial Intelligence, (UAI 2005)

Exponential Family Harmoniums with an Application to Information Retrieval.  
Max Welling, Michal Rosen-Zvi and Geoffrey E. Hinton  
Advances in Neural Information Processing Systems 17 MIT Press, Cambridge, MA (2005)

The Author-Topic Model for Authors and Documents  
Michal Rosen-Zvi, Tom Griffiths, Mark Steyvers and Padhraic Smyth  
Proceedings of Uncertainty in Artificial Intelligence, (UAI 2004)

Probabilistic Author-Topic Models for Information Discovery  
Mark Steyvers, Padhraic Smyth, Michal Rosen-Zvi, and Tom Griffiths  
Proceedings of the International Conference on Knowledge Discovery and Data Mining, (KDD 2004)

Approximate Inference by Markov Chains on Union Spaces  
Max Welling, Michal Rosen-Zvi and Yee Whye Teh,  
Proceedings of the Twenty-First International Conference on Machine Learning, (ICML 2004)

Time series prediction by feedforward neural networks - is it difficult?  
Michal Rosen-Zvi, Ido Kanter and Wolfgang Kinzel,  
J. Phys. A: Math. Gen. **36**: 4543-4550, (2003)

Mutual learning in a tree parity machine and its application to cryptography  
Michal Rosen-Zvi, Einat Klein, Ido Kanter, and Wolfgang Kinzel  
Phys. Rev. E **66**, 066135 (2002)

Generalization and capacity of extensively large two-layered perceptrons  
Michal Rosen-Zvi, Andreas Engel, and Ido Kanter  
Phys. Rev. E **66**, 036138 (2002)

Cryptography based on neural networks - analytical results,  
Michal Rosen-Zvi, Ido Kanter and Wolfgang Kinzel,  
J. Phys. A: Math. Gen. **35** L707 (2002)

Multilayer neural networks with extensively many hidden units,  
Michal Rosen-Zvi, Andreas Engel and Ido Kanter,  
Phys. Rev. Lett., **87**, 078101, (2001).

Training a perceptron in a discrete weight space,  
Michal Rosen-Zvi and Ido Kanter,  
Phys. Rev. E., **64**, 046109, (2001).

On-line learning in the Ising perceptron,  
Michal Rosen-Zvi,  
J. Phys. A: Math. Gen. **33**, 7277, (2000).

Learnability of periodic activation functions: general results,  
Michal Rosen-Zvi, Michael Biehl and Ido Kanter,  
Phys. Rev. E. **58**, 3606, (1998).

Frequency-domain photon migration in two-layered tissues,  
Michal Rosen-Zvi and Haim Taitelbaum,  
Optical Society of America, TOPS **3**, 101 (1996).

### **Tech reports and submissions**

Learning Author Topic Models from Text Corpora  
Michal Rosen-Zvi, Thomas Griffiths, Mark Steyvers and Padhraic Smyth, submitted

On the Relationship between Deterministic and Probabilistic Directed Graphical Models  
Pierre Baldi and Michal Rosen-Zvi, submitted

Approximate inference and the DLR equations  
Michal Rosen-Zvi and Michael I. Jordan  
Technical Report, University of California, Berkeley, (2003)

### **Papers Given:**

A panel about “Knowledge Discovery and Dissemination”  
The second conference on Intelligence and Security Informatics, ISI2004  
Invited discussant, (2004).

“The Author-Topic Model: a Generative Model for Authors and Documents”  
Mark Steyvers, Michal Rosen-Zvi, Tom Griffiths and Padhraic Smyth.  
Workshop at NIPS 2003, (2003).

"Simple and chaotic time series: learning the rule versus prediction",  
Frontiers in the Physics of Complex Systems,  
Dead Sea, Israel, (2001).

"Training a perceptron in a discrete weight space",  
Statistical Mechanics of Information Processing in Cooperative Systems,  
Max Planck Institute, Dresden, Germany, (2001).

"Learning of periodic activation function - general result",  
International Seminar on Statistical Physics of Neural Networks,  
Max Planck Institute, Dresden, Germany, (1999).

"Frequency-domain analysis of layered tissues".  
Optical Topography and Spectroscopy of Tissues- Bios 97,  
San-Jose, California, USA, (1997).

"Model of Photon Migration in Two-Region Slab-Like Tissues"  
The 8th Mediterranean Conference on Medical and Biological Engineering  
Jerusalem, Israel, (1997).

"Frequency-domain analysis of photon migration in layered tissues".  
The 7th Mediterranean Conference on Medical and Biological Engineering  
Jerusalem, Israel, (1995).

### **Professional Activities**

Program Committee member of the 21<sup>st</sup> Conference on Uncertainty in Artificial Intelligence, UAI 2005.

Reviewer of the 19<sup>th</sup> International Joint Conference in Artificial Intelligence, IJCAI 2005.

Program Committee member of the 10<sup>th</sup> international workshop on artificial intelligence and statistics, AISTAT 2005.

Reviewer of the 20<sup>th</sup> Conference on Uncertainty in Artificial Intelligence UAI 2004.

Ad hoc Reviewer: Bayesian Analysis Journal, Neural Network Journal,  
IEEE Transactions on Computers.

### **Awards:**

1992 Departmental award for excellence - B.Sc. degree  
1995 Departmental award for excellence - M.Sc. degree  
1996 Rector's award for excellence  
1997 Memorial scholarship - in the name of Otto Schwartz  
1998 Prize for excellency in teaching  
2000 Rector's award for excellence  
2004 Lady Davis Postdoctoral Fellowship (declined)  
2005 Yeshaiia Horvitz Association Scholarship in Complexity Science

### **Teacher Assistant**

1996 Matrices and tensors (undergraduate)  
1997-1998 Analytical mechanics (undergraduate)  
1996-1999 Statistical mechanics and thermodynamic (undergraduate)  
1999-2000 Solid state physics (undergraduate)  
2000-2002 Quantum mechanics (undergraduate)  
1998-2002 Advanced statistical mechanics (graduate)