

# URI SHAHAM

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## Academic Education

### [2012-2017] Yale University, CT:

- Ph.D Statistics. Dissertation topic: "Algorithms, Applications and Theoretical Properties of Deep Neural Networks".
- Advisors: Prof. Ronald Coifman (Applied Math), Prof. Sahand Negahban (Statistics), Prof. Yuval Kluger (Computational Biology).

### [2006-2008] Ben-Gurion University of the Negev, Israel:

- M.Sc. Industrial Engineering. Program: Intelligent systems. Thesis topic: Classification using normalized compression distance. Thesis grade: 96/100. Overall M.Sc. grade: 89.9/100.

### [2003-2007] Ben-Gurion University of the Negev, Israel:

- B.Sc. Mathematics. Graduation summa cum laude. Grade: 93.8/100
- B.Sc. Industrial Engineering and Management. Graduation cum laude. Grade: 92.8/100.

## Academic Experience

- [2022-Present] Assistant Professor, Department of Computer Science, Bar Ilan University.
- [2017-Present] Assistant Professor Adjunct, Center for Outcome Research and Evaluation, Yale University.

## Publications & Conferences

### Accepted Publications:

- Shaham, Uri, Cloninger Alexander, and Coifman Ronald R. "[Provable Approximation Properties for Deep Neural Networks](#)". Applied and Computational Harmonic Analysis 2016.
- Shaham, Uri, Cheng, Xiuyuan, Dror, Omer, Jaffe, Ariel, Nadler, Boaz, Chang, Joseph and Kluger, Yuval. "[A Deep Learning Approach to Unsupervised Ensemble Learning](#)". ICML 2016.
- Shaham, Uri, Stanton, Kelly P., Zhao, Jun, Li, Huamin, Raddassi, Khadir, Montgomery, Ruth, and Kluger, Yuval. "[Removal of Batch Effects using Distribution-Matching Residual Networks](#)". Bioinformatics 2017.
- Li, Huamin, Shaham, Uri, Yao, Yi, Montgomery, Ruth and Kluger, Yuval. "[Gating Mass Cytometry Data by Deep Learning](#)". Bioinformatics 2017.
- Mishne, Gal, Shaham, Uri, Cloninger, Alexander, and Cohen, Israel. "[Diffusion Nets](#)". Applied and Computational Harmonic Analysis 2017.

- Shaham, Uri, and Lederman, Roy. "[Learning by Coincidence: Siamese Networks and Common Variable Learning](#)". Pattern Recognition 2018.
- Shaham, Uri, Stanton, Kelly, Li, Henry, Basri, Ronen, Nadler, Boaz, and Kluger, Yuval. "[SpectralNet: Spectral Clustering using Deep Neural Networks](#)". ICLR 2018.
- Shaham, Uri, Yamada, Yutaro, and Negahban, Sahand. "[Understanding Adversarial Training: Increasing Local Stability of Neural Nets through Robust Optimization](#)". Neurocomputing 2018.
- Katzman, Jared, Shaham, Uri, Cloninger, Alexander, Bates, Jonathan, Jiang, Tingting, and Kluger, Yuval. "[DeepSurv: personalized treatment recommender system using a Cox proportional hazards deep neural network](#)". BMC Medical Research Methodology 2018.
- Shaham Uri, Zahavy Tom, Caraballo Cesar, Mahajan Shiwani, Massey Daisy, and Krumholz Harlan. "[Learning to Ask Medical Questions using Reinforcement Learning](#)". Machine Learning in Healthcare 2020.
- Lindenbaum, Ofir, Shaham,Uri, Svirski, Jonathan, Peterfreund, Erez, and Kluger, Yuval. "[Differentiable Unsupervised Feature Selection based on a Gated Laplacian](#)". Neurips 2021.
- Shaham, Uri, Lindenbaum, Ofir, Svirsky, Jonathan and Kluger, Yuval. "[Deep Unsupervised Feature Selection by Discarding Nuisance and Correlated Features](#)". Neural Networks 2022.
- Shaham, Uri, Svirsky, Jonathan, Katz, Ori and Talmon, Ronen. "[Discovery of single independent variable](#)" Neurips 2022.

#### Pre-prints:

- Shaham, Uri, and Steinberger Stefan. "[Stochastic Neighbor Embedding Separates Well-Separated Clusters](#)".
- Jiang, Tingting, Shaham, Uri, Parisi, Fabio, Halaban, Ruth, Safonov, Anton, Kluger, Harriett, Weissman, Weismann, Chang, Joseph and Kluger, Yuval. "[Methods for detecting co-mutated pathways in cancer samples to inform treatment selection](#)".
- Aneja, Sanjay, Shaham, and Krumholz, Harlan. "[Deep Neural Network to Predict Local Failure Following Stereotactic Body Radiation Therapy: Integrating Imaging and Clinical Data to Predict Outcomes](#)".
- Shaham, Uri, Garritano, Jim, Yamada, Yutaro, Weinberger, Ethan, Cloninger, Alex, Cheng, Xiuyuan, Stanton, Kelly and Kluger, Yuval. "[Defending against Adversarial Attacks using Basis Functions Transformations](#)".
- Shaham, Uri. "[Batch Effect Removal via Batch Free Encoding](#)".
- Au, Benjamin, Shaham, Uri, Dhruva, Sanket, Bouras, Georgios, Cristea, Ecaterina, Coppi, Andreas, Warner, Fred, Li, Shu-Xia, and Krumholz, Harlan." [Automated Characterization of Stenosis in Invasive Coronary Angiography Images with Convolutional Neural Networks](#)".
- Shaham, Uri and Svirsky, Jonathan. "[Deep Ordinal Regression using Optimal Transport Loss and Unimodal Output Probabilities](#)".

#### Work Experience

- **[2021-2023]** AI mentor at Israel's prime minister's office

- **[2017-2021]**      Researcher at Final. Developing algorithms for high frequency trading.
- **[2010-2012]**      Senior Machine Learning researcher at PayPal.
- **[2009-2010]**      Algorithm developer at Retalix.
- **[2008-2009]**      Algorithms developer at startup company “Zikit Artificial Intelligence”.

### **Areas of Professional Interest**

- Machine learning, Deep Learning, Statistics, Applied Mathematics, Design of algorithms, Information theory, Evolutionary algorithms.

### **Technical Knowledge & Software**

- Python, PyTorch, Matlab, R.

### **Languages:**

- Hebrew - mother tongue
- English - excellent mastery

### **Skills and Other Information:**

- High motivation, professional curiosity and high learning ability.
- Good inter-personal communication skills, team player.
- Independent.
- Psychometric grade: 768\800.
- Play and perform jazz on piano, studied 4 years at Rimon School of jazz and contemporary music.

### **Links:**

- [Google Scholar](#)
- [LinkedIn](#)
- [GitHub](#)