

○ Profile

A veteran Machine Learning / Data Scientist with strong engineering capabilities.

At Microsoft I have been fortunate to tackle interesting problems in different domains ranging from recommender systems to speech recognition, including delivering the core IP in products with millions of users.

In my graduate studies I have focused on studying the principles of the three-dimensional folding and organization of DNA. My military service revolved around Cyber Security.

○ Education

University of Tel-Aviv, Ph.D., 2013-2020

Computer Science dpt., Bioinformatics research under the joint supervision of Benny Chor (CS) and Zohar Yakhini (CS @ IDC & Technion).

Technion Institute of Technology, M.Sc., 2009-2012

Computer Science dpt., Bioinformatics research under the joint supervision of Zohar Yakhini (CS) and Itai Yanai (BIO). GPA: 90. Was a teaching assistant in the following courses:

- 2011 - Introduction to Bioinformatics
- 2010 - Computer Organization and Programming (Assembly)

Haifa University, B.Sc., 2006-2009

Computer Science & Economics joint degree.

The Hebrew Reali School, 1989-2001

High school, Enhanced Computer Science (Final project in Artificial Intelligence) & Biology tracks, graduated with a technological diploma.

○ Skills

Areas of interest

Machine learning, Deep Learning, Speech and language recognition, Bayesian inference, Dimensionality reduction, Information retrieval, Interpolation and inference, Class discovery, Data analysis, Statistical enrichment analysis, Optimization, Compressed sensing, Parallelization, Distributed systems, Spectral graph theory.

Core Programming Language Experience

Matlab, C#, Scope Map-Reduce, Python, C++, SQL.

Spoken languages

Hebrew, English - Native tongue level

○ Relevant Work Experience

Senior Data & Applied Scientist – Education Analytics Team, Microsoft R&D, Herzeliya, 2020

Developing a behavioral analytics platform using deep learning on semi-structured time-series data. Our goal is to improve learning outcomes of students by monitoring and offering personalized learning.

Senior Researcher – Media AI Team, Microsoft R&D, Herzeliya, 2017-2019

Building tools for understanding media at vi.microsoft.com, recently designed and implemented a speech and language identification solution for audio, built from scratch with a SOTA deep-learning model and deployed to the product. Using Python, CNTK, C# on Azure. Gave internal workshops and took a leading role in organizing an internal ML/DS seminars.

Researcher – Xbox Recommendation Team, Microsoft R&D, Herzeliya, 2013-2017

Machine Learning Algorithms, Statistics, Big data analysis, A/B testing, Business Intelligence, Class discovery, Dimensionality reduction, Recommender systems, Variational Bayes probabilistic matrix factorization, Natural language processing. Using COSMOS (SCOPE) Map-Reduce environment, C#, R.

Patents filed for: Hybrid explanations in collaborative filter based recommendation system, Multilingual content-based recommender system (awarded US9898773), System and method for producing item similarities from usage data, Proactive content recommendation in

teaching space.

○ Military Service

Intelligence officer in an operational unit in the field of Cyber security - IDF, Giv'atayim, 2003-2006

Designed, coded and supervised a team working on systems for routine use in the unit. Influential in several key projects including one which won the 2006 Israel Defense award. Acquired extensive knowledge and experience in cyber security, and communication networks. Participated in a civilian cyber security course (John Bryce's SeeSecurity).

○ Awards & Patents

- **Patent pending: Weak language identification for mono-lingual based polyglot automatic speech recognition (ASR), 2019**
- **Patent #US10242098: Hierarchical Multisource Playlist Generation, USPTO, 3/2019**
- **Patent #US9898773: Multilingual content-based recommendation system, USPTO, 2/2018**
- **Machine Learning AI & Data Science (MLADS), Microsoft's AI conference, Fall 2017, Distinguished contribution award for "Groove Radio".**
- **Frontiers in Genetics VIII, a Bioinformatics conference, 2013, for Poster award for "Spatial localization of co-regulated genes exceeds genomic gene clustering in the *S. cerevisiae* genome".**
- **Paper of the month, Technion's biology faculty, 1/2013, for "Spatial localization of co-regulated genes exceeds genomic gene clustering in the *S. cerevisiae* genome".**
- **Paper of the month, Technion's biology faculty, 10/2012, for "A genomic bias for genotype-environment interactions in *C. elegans*".**
- **Israel defense award, Presidential commendation, 2006, for projects heavily involved with during military service.**

○ Publications

- **Improving Classification via Checksum (working title), In preparation, Shay Ben-Elazar, Karthik C.S., Vincent Cohen-Addad Viallat, Eylon Yogev.**
- **miRNA normalization enables joint analysis of several datasets to increase sensitivity and to reveal novel miRNAs differentially expressed in breast cancer, Submitted to PLOS Computational Biology, 2019, Shay Ben-Elazar, Miriam Ragle Aure, Kristin Jonsdottir, Suvi-Katri Leivonen, Vessela N. Kristensen, Emiel A.M. Janssen, Kristine Kleivi Sahlberg, Ole Christian Lingjærde and Zohar Yakhini**
- **The Functional 3D Organization of Unicellular Organisms [\[link\]](#), Nature Scientific Reports, 2019, Shay Ben-Elazar, Benny Chor, Zohar Yakhini.**
- **Spoken Language Identification in Video Indexer [\[link\]](#), Microsoft Artificial Intelligence Blog 2018, MLADS 2018, Shay Ben-Elazar.**
- **Groove Radio: A Bayesian Hierarchical Model for Personalized Playlist generation [\[link\]](#), WSDM 2017, MLADS 2017, Data Science Summit 2018, Shay Ben-Elazar, Gal Lavee, Oren Barkan, Hilik Berezin, Tal Zaccai, Noam Koenigstein.**
- **Extending partial haplotypes to full genome haplotypes using chromosome conformation capture data [\[link\]](#), Bioinformatics 2016 and presented at ECCB 2016, Shay Ben-Elazar, Benny Chor, Zohar Yakhini.**
- **A Hybrid Explanations framework for collaborative filtering Recommender systems [\[link\]](#), RecSys Posters 2014.**
- **ELOPER: Elongation of paired-end reads as a pre-processing tool for improved de novo genome assembly [\[link\]](#), Bioinformatics, 2013, David H. Silver, Shay Ben-Elazar, Alexei Bogoslavsky, Itai Yanai.**
- **Spatial localization of co-regulated genes exceeds genomic gene clustering in the *S. cerevisiae* genome [\[link\]](#), Nucleic Acids Research, 2013, Shay Ben-Elazar, Zohar Yakhini, Itai Yanai.
Includes Matlab software, INSP3CT – Interpolation and Statistical Proximity of 3C Tables.**
- **A genomic bias for genotype-environment interactions in *C. elegans* [\[link\]](#), Molecular Systems Biology, 2012
Vladislav Grishkevich, Shay Ben-Elazar, Tamar Hashimshony, Daniel H. Schott, Craig P. Hunter, and Itai Yanai.**