

Zoe Piran - CV

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Citizenship: Israeli, USA, Swiss

Date of Birth: 16/4/1992

HIGHER EDUCATION AND TRAINING

JAN. 2022–CURRENT Ph.D. student (stage B), Computer Science, The Hebrew University, Jerusalem.

Supervisor: Dr. Mor Nitzan.

OCT. 2020- DEC. 2021 Ph.D. student (stage A), Computer Science, The Hebrew University, Jerusalem.

Supervisor: Dr. Mor Nitzan.

2018–2020 M.Sc. in Physics, The Hebrew University, Jerusalem.

Supervisors: Prof. Naftail Tishby and Dr. Zohar Ringel.

magna cum laude (Average: 95.8).

2016–2018 B.Sc. double major in Physics and Computer Science, The Hebrew University, Jerusalem.

magna cum laude (Average: 94)

2006–2010 Blich High School, Ramat-Gan.

Enhanced (5 units): Physics, Mathematics, English (native speakers) and Dance.

MILITARY SERVICE

2010-2014 IDF, Unit 8200, Lieutenant

Management of a research team in the field of Cyber Security (e.g. AV products, Network Security, Cryptography, Cyber Attacks, Malware forensics), Telecom Infrastructure and Information Security Research.

2010 'Special analysis studio' (A'AM) course of intelligence corps

RESEARCH EXPERIENCE

2020–CURRENT Hebrew University, School of Computer Science and Engineering, Dr. Mor Nitzan.

"Encoding and decoding cellular identities in single-cell data"

Uncovering structure in complex biological systems using methods and ideas from Computer Science and Physics.

2018–2020 Hebrew University, Racah Institute, Prof. Naftail Tishby and Dr. Zohar Ringel.

"The Dual Information Bottleneck"

Suggesting a technique in Information Theory which incorporates Statistical Mechanics and Deep Learning.

OCTOBER 2019 Harvard University, NSF-Simons Center for Quantitative Biology.

Research as a Visiting Scholar.

2014-2017 Hebrew University, School of Computer Science and Engineering and Alexander Silberman Institute of Life Sciences, Prof. Nir Friedman.

Acquiring computational biology knowledge while performing big data analysis on biological data.

AWARDS AND HONOURS

- ▷ Clore Scholarship for Ph.D students, *The Clore Israel Foundation* (2022-current).
- ▷ Scholarship for outstanding doctoral students in data-science, *Council for Higher Education* (2021-current).
- ▷ Scholarship for master's degrees for outstanding women in Hi-Tech, *Council for Higher Education* (2018-2020).
- ▷ Computer Science Honors program for undergraduates, *The Hebrew University, Jerusalem* (2017-2018).
- ▷ Dean's Honors List, *The Hebrew University, Jerusalem* (2016-2018).

VOLUNTEERING AND EDUCATIONAL WORK

2020–CURRENT	Co-leader of the "Physics & Computer Science undergraduate program" at the Hebrew University.
2018–CURRENT	Teacher assistant at the Hebrew University. – "Computation and Physics Lab." – "Mechanics for Bio-Medicine Students." – "General Physics - Mechanics For Chemistry & Earth Students."
2018–CURRENT	Management of media channels of the Racah Institute of Physics, the Hebrew University.

LIST OF PUBLICATIONS

- ▷ Z. Piran, N. Cohen, Y. Hoshen & M. Nitzan, "Biological representation disentanglement of single-cell data". *preprint bioRxiv:2023.03.05.531195* (2023).
- ▷ Z. Piran & M. Nitzan, "Uncovering hidden biological processes by probabilistic filtering of single-cell data". *preprint bioRxiv:2023.01.18.524512* (2023).
- ▷ M. Ricci, N. Moriel, Z. Piran & M. Nitzan, "Phase2vec: Dynamical systems embedding with a physics-informed convolutional network". *Eleventh International Conference on Learning Representations* (2023).
- ▷ M. Lange*, Z. Piran*, M. Klein, F. J. Theis, & M. Nitzan, "Mapping lineage-traced single-cells across time-points". *LMRL Workshop-NeurIPS* (2021). *equal contribution.
- ▷ Z. Piran & T. Piran, "The Origin of Binary Black Holes Mergers". *The Astrophysical Journal* 892, no. 1 (2020): 64.
- ▷ Z. Piran, R. Shwartz-Ziv, & N. Tishby, "The Dual Information Bottleneck". *preprint arXiv:2006.04641* (2020).