

Hillel Sanhedrai

Ph.D. candidate in Physics



hillel.sanhedrai@gmail.com



[youtube](#)



8.12.1986



+972 50-974-8704



[scholar](#)



EDUCATION

Since 2018

Ph.D. Physics

Bar-Ilan University, Ramat Gan, Israel

Thesis: Resilience of Network Dynamics

Topics: Nonlinear dynamics on complex networks, percolation on interdependent networks, epidemics on static and evolving networks, overload failures on networks, random walk and foraging problems

Supervisors: Prof. Shlomo Havlin & Prof. Baruch Barzel

2016-2017

M.Sc. Physics, magna cum laude

Bar-Ilan University, Ramat Gan, Israel

Thesis: Resilience of Network Dynamics

Supervisors: Prof. Shlomo Havlin & Prof. Baruch Barzel

2013-2015

B.Sc. Mathematics & Physics, summa cum laude

Bar-Ilan University, Ramat Gan, Israel

2006-2012

Yeshiva studies, Beit El, Israel



PUBLICATIONS

2022

H. Sanhedrai and S. Havlin. Epidemics on evolving networks with varying degrees. *arXiv:2201.02299*. 2022 Jan 7.

2021

H. Sanhedrai, J. Gao, A. Bashan, M. Schwartz, S. Havlin and B. Barzel. Reviving a failed network through microscopic interventions. *Nature Physics*
<https://doi.org/10.1038/s41567-021-01474-y>

2021

H. Sanhedrai and Y. Maayan. Impact of food distribution on lifetime of a forager with or without sense of smell. *Physical Review E* 103.1 : 012114

2020

Z. Jilong*, **H. Sanhedrai***, F. Zhang, Y. Yang, S. Guo, S. Yang and D. Li. Network endurance against cascading overload failure. *Reliability Engineering & System Safety* :106916

- 2020 Y. Liu*, **H. Sanhedrai***, G. Dong, L.M. Shekhtman, F. Wang, S.V. Buldyrev and S. Havlin. Efficient network immunization under limited knowledge. *National Science Review*, nwa229, <https://doi.org/10.1093/nsr/nwa229>
- 2020 B. Gross*, **H. Sanhedrai***, L. Shekhtman and S. Havlin. Interconnections between networks acting like an external field in a first-order percolation transition. *Physical Review E*, 101 (2), 022316
- 2020 E.E. Asher*, **H. Sanhedrai***, N.K. Panduranga, R. Cohen and S. Havlin. Distance distribution in extreme modular networks. *Physical Review E*, 101 (2), 022313
- 2020 **H. Sanhedrai**, Y. Maayan and L.M. Shekhtman. Lifetime of a greedy forager with long-range smell. *EPL (Europhysics Letters)*, 128 (6), 60003
- 2016 J. Zhao, D. Li, **H. Sanhedrai**, R. Cohen and S. Havlin. Spatio-Temporal Propagation of Cascading Overload Failures in Spatially Embedded Networks, *Nature Communications* 7, 10094

*These authors contributed equally



HONORS

2016-2020	Teaching Excellence in five consecutive years
2013,2014,2017	Rector's Prize
2015	Dean's Prize



AWARDS

2021	The Mordecai and Monique Katz Graduate Fellowship Program for excellent students in the last year of Ph.D.
2018-2021	President's scholarship for excellent doctoral students
2015	The "Final" Company Prize in Mathematics awarded to a few excellent students in Israel
2013-2015	Member of "Ilanot" Program of undergraduate studies in Bar-Ilan University for outstanding candidates



CONFERENCES

2021	Lightning talk in NETWORKS2021 Indiana USA (via zoom)
2019	Oral presentation in NetSci2019 Vermont USA
2018	Oral presentation in NetSci2018 Paris
2017	Poster presentation in NetSciX2017 Tel-Aviv



SCHOOLS

- 2018 Summer School "The Complex Math of the Real World" in Technion, Israel
2017 Summer school on stochastic processes with applications to Physics and Biophysics.
Acre, Israel
2016 Summer school on complex networks in Como, Italy



TEACHING EXPERIENCE

- 2016-2021 Teaching assistant in Department of Physics in Bar-Ilan University in courses: thermodynamics, numerical analysis, waves, complex functions and Fourier analysis & partial differential equations.



COMMUNITY SERVICE

- 2004 Volunteering in Magen David Adom (Israel's National Emergency Pre-Hospital Medical)
2009-2010 Military service as infantry fighter in the Kfir Brigade in the Israel Defense Forces.
2020 Volunteering in teaching Physics to students from low socio-economic status.
2022 Volunteering in distribution of food to the needy.



SKILLS

Matlab	●●●●●
Latex	●●●●●
Python	●●●●●



LANGUAGES

Hebrew	●●●●●
English	●●●●●



REFERENCES

Prof. Shlomo Havlin
Email: havlins@gmail.com

Prof. Baruch Barzel
Email: baruchbarzel@gmail.com

Prof. Reuven Cohen
Email: reuven@math.biu.ac.il

Dr. Amir Bashan
Email: amir.bashan@gmail.com

Prof. Moshe Schwartz
Email: brickims6@gmail.com

Prof. Daqing Li
Email: daqingl@buaa.edu.cn

Prof. Jichang Zhao
Email: jichang@buaa.edu.cn