

Yoav Ram — CV

School of Computer Science, IDC Herzliya

yoav.ram@idc.ac.il www.yoavram.com +972 (545) 383136

Education

2010-2016	Ph.D. , Direct Ph.D. track, Tel Aviv University Thesis title: <i>The Evolution of Stress-Induced Mutagenesis: Causes and Consequences</i>
2010-2012	M.Sc. , Direct Ph.D. track, Tel Aviv University Theoretical and Computational Biology
2007-2010	B.Sc. , Biology and Mathematics <i>magna cum lauda</i> , Tel Aviv University

Employment

2018-	Senior lecturer , Efi Arazi School of Computer Science, Interdisciplinary Center Herzliya
2016-2018	Postdoctoral fellow , Center for Computational, Evolutionary, and Human Genomics, Stanford University Mentor — Prof. Marcus W. Feldman, Department of Biology
2016	Postdoctoral fellow , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences
2016	Data scientist , Neura
2010-2016	Ph.D. student , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences
2008-2010	Research assistant , Hadany Lab, Tel Aviv University Mentor — Prof. Lilach Hadany, Department of Plant Sciences
2008-2009	Software developer , NetAlign
2006-2008	Software developer , XLNet

Grants & Awards

2020	Israel Science Foundation (ISF) KillCorona research grant, 2020-2022
*	John Templeton Foundation grant, Co-PI (with MW Feldman, Stanford; K Laland, St. Andrews), 2021-2024
*	Minerva Center on Lab Evolution, Co-PI (head: Y Pilpel, WIS), 2020-2025
2019	Israel Science Foundation (ISF) Personal Research grant, 2019-23
*	AWS Cloud Credits for Research program
*	NVIDIA Accelerated Data Science GPU grant
2016-17	Postdoctoral fellowship from the Stanford Center for Computational, Evolutionary, and Human Genomics
2015-16	Dean's Award for Excellence in Teaching , Engineering Faculty, Tel Aviv University
2015	The Israel Society for Microbiology travel award
*	The Anat Karuskopf Fund travel award
*	The Manna Institute for Plants BioSciences travel award
2014	The Israeli Ministry of Science and Technology International Education Scholarship
2013-2014	Research achievements scholarship, Life Sciences Faculty, Tel Aviv University.
*	Fellowship from the Manna Program in Food Safety and Security
2013	The Manna Institute for Plants BioSciences travel award
2012	Registration & accommodation waiver for PopGroup45 in Nottingham, UK
*	Crowd-funded travel expenses for PopGroup45 via The #SciFund Challenge
2011-2012	Research achievements scholarship, Life Sciences Faculty, Tel Aviv University
2011	Society for the Study of Evolution International travel award
2010-2015	Direct Ph.D. scholarship , Department of Plant Sciences, Tel Aviv University
2010	Society for Molecular Biology & Evolution Undergraduate Diversity Mentoring Program award
*	Best poster award at Mathematical Methods in Systems Biology workshop, Tel Aviv, Israel
2009	Amos de-Shalit Ulpana for excellent students in Life Sciences, Weizmann Institute.

Publications *equal contribution | citation counts from Scholar

- Preprints** Kohanovski, I., Obolski, U., **Ram, Y.** (2020) *Inferring the effective start dates of non-pharmaceutical interventions during COVID-19 outbreaks.* medRxiv. DOI: [10.1101/2020.05.24.20092817](https://doi.org/10.1101/2020.05.24.20092817)
- Arthur, R.F., Jones, J.H., Bonds, M.H., **Ram, Y.**, Feldman, M.W. *Adaptive social contact rates induce complex dynamics during epidemics.* bioRxiv. DOI: [10.1101/2020.04.14.028407](https://doi.org/10.1101/2020.04.14.028407)
- Cohen, O., **Ram, Y.**, Hadany, L., Gafny, S., Geffen, E. *Annual climatic fluctuations and short-term variations in population genetics.* Submitted.
- Published** Kolodny, O., Berger, M., Feldman, M.W., **Ram, Y.** (2020) *A new perspective for mitigation of SARS-CoV-2 infection: priming the immune system for attack.* Open Biology. DOI: [10.1098/rsob.200138](https://doi.org/10.1098/rsob.200138)
- Krebs Denton, K., **Ram, Y.**, Liberman, U., Feldman, M.W. (2020) *Cultural evolution of conformity and anticonformity.* Proceedings of the National Academy of Sciences USA. DOI: [10.1073/pnas.2004102117](https://doi.org/10.1073/pnas.2004102117)
- Ram, Y.**, Obolski, U., Feldman, M.W., Berman, J. and Hadany, L. (2020) *Reply to Balsa-Canto et al.: Growth models are applicable to growth data, not to stationary-phase data.* Proceedings of the National Academy of Sciences USA. DOI: [10.1073/pnas.1917758117](https://doi.org/10.1073/pnas.1917758117)
- Liberman, U., **Ram, Y.**, Altenberg, L., Feldman, M.W. *The Evolution of Frequency-Dependent Cultural Transmission.* Theoretical Population Biology. DOI: [10.1016/j.tpb.2019.12.004](https://doi.org/10.1016/j.tpb.2019.12.004)
- Ram, Y.**, Dellus-Gur, E., Bibi, M., Karkare, K., Obolski, U., Feldman, M.W., Cooper, T.F., Berman, J. and Hadany, L. (2019) *Predicting Microbial Growth in a Mixed Culture from Growth Curve Data.* Proceedings of the National Academy of Sciences USA, 201902217. DOI: [10.1073/pnas.1902217116](https://doi.org/10.1073/pnas.1902217116).
- Ram, Y.**, Hadany, L. (2019) *Evolution of stress-induced mutagenesis in the presence of horizontal gene transfer.* The American Naturalist, 194:1. DOI: [10.1086/703457](https://doi.org/10.1086/703457).
- Zinger, E., Guiejman, A., Obolski, U., **Ram, Y.**, Ruby, E., Binder, M., Yechieli, N., Ohad, N., Hadany L. (2019) *Less fit Lamium amplexicaule plants produce more dispersible seeds.* Scientific Reports, Accepted. DOI: [10.1038/s41598-019-42158-1](https://doi.org/10.1038/s41598-019-42158-1).
- Ram, Y.**, Liberman, U., Feldman, M.W. (2019) *Vertical and oblique cultural transmission fluctuating in time and in space.* Theoretical Population Biology, 125:11-19. DOI: [10.1016/j.tpb.2018.11.001](https://doi.org/10.1016/j.tpb.2018.11.001).
- Ram, Y.**, Liberman, U., Feldman, M.W. (2018) *Evolution of vertical and oblique transmission under fluctuating selection.* Proceedings of the National Academy of Sciences USA, 201719171. DOI: [10.1073/pnas.1719171115](https://doi.org/10.1073/pnas.1719171115).
- Ram, Y.**, Altenberg, L., Liberman, U., Feldman, M.W. (2018) *Generation of variation and a modified mean fitness principle: Necessity is the mother of genetic invention.* Theoretical Population Biology, 123:1-8. DOI: [10.1016/j.tpb.2018.02.004](https://doi.org/10.1016/j.tpb.2018.02.004).
- Harari, Y., **Ram, Y.**, Rappoport, N., Hadany, L., Kupiec, M. (2018) *Spontaneous changes in ploidy are common in yeast.* Current Biology, 28:111. DOI: [j.cub.2018.01.062](https://doi.org/10.1016/j.cub.2018.01.062). 4 citations

Harari, Y., **Ram, Y.**, Kupiec, M. (2018) *Frequent ploidy changes in growing yeast cultures*. Current Genetics, 0:14.. DOI: [10.1007/s00294-018-0823-y](https://doi.org/10.1007/s00294-018-0823-y). 1 citation

Obolski, U.*, **Ram, Y.***, Hadany, L. (2018) *Evolution on rugged adaptive landscapes*. Reports on Progress in Physics, 81: 12602. DOI: [10.1088/1361-6633/aa94d4](https://doi.org/10.1088/1361-6633/aa94d4). 2 citations

Dellus-Gur, E., **Ram, Y.**, Hadany, L. (2017) *Errors in mutagenesis and the benefit of cell-to-cell signalling in the evolution of stress-induced mutagenesis*. Royal Society Open Science, 4:170529. DOI: [10.1098/rsos.170529](https://doi.org/10.1098/rsos.170529). 1 citation

Obolski, U., Lewin-Epstein, O., Even-Tov, E., **Ram, Y.**, Hadany, L. (2017) *With a little help from my friends: cooperation can accelerate the rate of adaptive valley crossing*. BMC Evolutionary Biology, 17:143. DOI: [10.1186/s12862-017-0983-2](https://doi.org/10.1186/s12862-017-0983-2). 2 citations

Rougier, N.P., ... , **Ram, Y.**, et al. (2017) *Sustainable computational science: the ReScience initiative*. PeerJ Computer Science, 3: e142. DOI:[10.7717/peerj-cs.142](https://doi.org/10.7717/peerj-cs.142). 11 citations

Ram, Y., Hadany, L. (2016) *Condition-dependent sex: who does it, when, and why?*. Philosophical Transactions of the Royal Society B, 371: 20150539. DOI: [10.1098/rstb.2015.0539](https://doi.org/10.1098/rstb.2015.0539). 14 citations

Ram, Y., Hadany, L. (2015) *The probability of improvement in Fisher's geometric model: a probabilistic approach*. Theoretical Population Biology, 99: 1-6. DOI: [10.1016/j.tpb.2014.10.004](https://doi.org/10.1016/j.tpb.2014.10.004). 5 citations

Ram, Y., Hadany, L. (2014) *Stress-induced mutagenesis and complex adaptation*. Proceedings of the Royal Society B. 281: 20141025. DOI: [10.1098/rspb.2014.1025](https://doi.org/10.1098/rspb.2014.1025). 33 citations

Gueijman, A., Ayali, A., **Ram, Y.**, Hadany, L. (2013) *Dispersing away from bad environments: The evolution of fitness-associated dispersal (FAD) in homogeneous environments*. BMC Evolutionary Biology, 13:125. DOI: [10.1186/1471-2148-13-125](https://doi.org/10.1186/1471-2148-13-125). 15 citations

Ram, Y., Hadany, L. (2012) *The evolution of stress-induced hypermutation in asexual populations*. Evolution 66: 2315-2328. DOI: [10.1111/j.1558-5646.2012.01576.x](https://doi.org/10.1111/j.1558-5646.2012.01576.x). 55 citations

Datasets & Software

Ram, Y., Hadany, L. (2019) *Data from: Evolution of Stress-Induced Mutagenesis in the Presence of Horizontal Gene Transfer*. Dryad Digital Repository. DOI:[10.5061/dryad.5t9211b](https://doi.org/10.5061/dryad.5t9211b).

Ram, Y., Hadany, L. (2019) *Curveball: Predicting microbial growth in a mixed culture from growth curve data*. Zenodo. [10.5281/zenodo.3263379](https://doi.org/10.5281/zenodo.3263379).

Ram, Y., Hadany, L. (2019) *Mamba: Version Baptiste*. Zenodo. [10.5281/zenodo.2563549](https://doi.org/10.5281/zenodo.2563549).

Ram, Y., Zinger, E., Hadany, L. (2017) *Sid: Image processing for seed images*. Zenodo. DOI: [10.5281/zenodo.344898](https://doi.org/10.5281/zenodo.344898).

Ram, Y., Hadany L. (2014) *Data from: Stress-induced mutagenesis and complex adaptation*. Dryad Digital Repository. DOI: [10.5061/dryad.3066j](https://doi.org/10.5061/dryad.3066j).

Ram, Y., Guiejman, A. and Hadany L. (2014) *proevolution simulation: Version Dobzhansky*. ZENODO. DOI: [10.5281/zenodo.11400](https://doi.org/10.5281/zenodo.11400).

Ram, Y., Hadany, L. (2014) *proevolution simulation: Version Charles*. ZENODO. DOI: [10.5281/zenodo.11401](https://doi.org/10.5281/zenodo.11401).

Teaching & Mentoring Experience

2018–	Senior Lecturer , IDC Herzliya Introduction to Computer Science (undergraduate mandatory course) Scientific Computing with Python (advanced course) Computational Models in Biology (graduate seminar)
2016–	Technical Instructor , Industry Designed and developed multiple scientific programming workshops Taught 1-5 day workshops in Israel and in California python.yoavram.com
2013-2015	Lecturer , Tel Aviv University Python Programming for Engineers (Engineering Faculty) Python Programming for Biologists (Life Sciences Faculty) Introduction to Programming for Engineers (summer introductory course) Gentle Introduction to Programming (summer introductory course)
2013-2016	Mentoring of undergraduate and graduate students at Hadany Lab Supervised five undergraduate students doing research projects Participated in mentoring of three postgraduate students
2011-2015	Teaching Assistant , Python Programming for Engineers, Tel Aviv University Python Programming for Engineers (Engineering Faculty) Extended Introduction to Computer Science (School of Computer Science) Evolution (Life Sciences Faculty)

Selected Presentations

2020	Invited speaker, <i>TAU Theory-fest</i> (Evolution workshop), Tel Aviv University
*	Invited speaker, <i>The Language of Evolution & Evolution of Language</i> conference, Weizmann Institute
*	Oral presentation, <i>FISEB/ILANIT</i> , Eilat.
2019	Oral presentation, <i>Gordon Research Conference</i> on Molecular Mechanisms in Evolution, Stonehill College, Easton, MA, USA
*	Oral presentation, <i>Israel Society for Microbiology</i> annual meeting, Weizmann Institute
*	Oral presentation, <i>Socio-Technological Evolution of the Human Species</i> workshop, Safed, Israel
*	Seminar, <i>Center for Genomics and Systems Biology</i> , New York University, New York
*	Session chair & Oral presentation, the <i>First Meeting of the Israeli Society for Evolutionary Biology</i> , Steinhardt Museum of Natural History, Tel Aviv
*	Poster presentation by student, the <i>First Meeting of the Israeli Society for Evolutionary Biology</i> , Steinhardt Museum of Natural History, Tel Aviv
*	Poster presentation by student, <i>Genetics, Genomics & Evolution</i> , Tel Aviv University
2018	Invited speaker, <i>Genome Evolution Conference</i> , Weizmann Institute

2017	Oral presentation, <i>Evolgenome</i> seminar, Stanford University
*	Poster, <i>Gordon Research Conference</i> on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
*	Oral presentation, <i>Israel Society for Microbiology</i> annual meeting.
*	Oral presentation, <i>FISEB / ILANIT</i> , Eilat.
2016	Seminar, the <i>Instituto Gulbenkian de Ciência</i> , Portugal.
2015	Oral presentation, <i>Gordon Research Conference</i> on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
*	Poster at the " <i>Forecasting Evolution?</i> " SFB 680 conference in Lisbon, Portugal
*	Seminar, <i>Institute of Science and Technology</i> , Austria
*	Short oral presentation, <i>Two2Many</i> Systems Biology Conference, Weizmann Institute
2013	Poster, <i>ESEB 2013</i> in Lisbon, Portugal
*	Poster, <i>Gordon Research Conference</i> on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA
*	Oral presentation, 5th Annual <i>SIDEER Graduate Symposium</i> , Ben-Gurion University of the Negev, Sede-Boqer Campus
2012	Oral presentation, <i>Genetics, Genomics, and Evolution</i> , Ben-Gurion University of the Negev. DOI: 10.6084/m9.figshare.96049 .
*	Oral presentation, <i>PopGroup 45</i> in Nottingham, UK. DOI: 10.6084/m9.figshare.95939 .
2011	Poster, <i>ESEB 2011</i> in Tübingen, Germany. F1000 Posters 2011, 2: 1484.
2010	Poster, <i>SMBE 2010</i> in Lyon, France.
as undergrad	Poster, <i>MMSB</i> in Tel Aviv, Israel, 2010 – Best poster award

Other Academic Activities

Service	
2019	Program committee, <i>First Meeting of the Israeli Society for Evolutionary Biology</i>
2011-2014	Co-organizer, BioMath Student Journal Club , Tel Aviv University
Outreach	
2019	Mentoring at DjangoGirls Ra'anana
2017	<i>Dive into Scientific Python</i> — Oral presentation, DataTalks meetup, Herzliya — YouTube
2016	<i>How to study evolution using Scientific Python</i> — Oral presentation, PyCon Israel, Tel Aviv — YouTube
2013	<i>Evolution and mutation in stressful times</i> — Oral presentation, The Evolution Series, Tel Aviv University Botanical Gardens — PDF
Popular Media	
	Even-Tov, E., Obolski, U., Gueijman, A., Ram, Y. , Hadany, L. (2010) <i>The Evolutionary Riddle of Sexual Reproduction</i> . Galileo, an Israeli journal for popular science: June, 32-41

Reviewer

2011–

PLOS Genetics
Proceeding of the Royal Society B
Evolution
Journal of Evolutionary Biology
PLOS ONE
Theoretical Population Biology
Integrative Zoology
Quarterly Review of Biology
ReScience
Israel Journal of Ecology & Evolution