

Yoav Ram — CV

School of Computer Science, IDC Herzliya

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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

Awards

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

- Published** **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

	<p>Gueijman, A., Ayali, A., Ram, Y., Hadany, L. (2013) <i>Dispersing away from bad environments: The evolution of fitness-associated dispersal (FAD) in homogeneous environments</i>. BMC Evolutionary Biology, 13:125. DOI: 10.1186/1471-2148-13-125. 15 citations</p> <p>Ram, Y., Hadany, L. (2012) <i>The evolution of stress-induced hypermutation in asexual populations</i>. Evolution 66: 2315-2328. DOI: 10.1111/j.1558-5646.2012.01576.x. 55 citations</p>
Submitted	<p>Liberman, U., Ram, Y., Altenberg, L., Feldman, M.W. <i>The Evolution of Frequency-Dependent Cultural Transmission</i>. Submitted.</p>
Datasets & Software	<p>Ram, Y., Hadany, L. (2019) <i>Data from: Evolution of Stress-Induced Mutagenesis in the Presence of Horizontal Gene Transfer</i>. Dryad Digital Repository. DOI:10.5061/dryad.5t9211b.</p> <p>Ram, Y., Hadany, L. (2019) <i>Curveball: Predicting microbial growth in a mixed culture from growth curve data</i>. Zenodo. 10.5281/zenodo.3263379.</p> <p>Ram, Y., Hadany, L. (2019) <i>Mamba: Version Baptiste</i>. Zenodo. 10.5281/zenodo.2563549.</p> <p>Ram, Y., Zinger, E., Hadany, L. (2017) <i>Sid: Image processing for seed images</i>. Zenodo. DOI: 10.5281/zenodo.344898.</p> <p>Ram, Y., Hadany L. (2014) <i>Data from: Stress-induced mutagenesis and complex adaptation</i>. Dryad Digital Repository. DOI: 10.5061/dryad.3066j.</p> <p>Ram, Y., Guiejman, A. and Hadany L. (2014) <i>proevolution simulation: Version Dobzhansky</i>. ZENODO. DOI: 10.5281/zenodo.11400.</p> <p>Ram, Y., Hadany, L. (2014) <i>proevolution simulation: Version Charles</i>. ZENODO. DOI: 10.5281/zenodo.11401.</p>

Teaching & Mentoring Experience

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

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)
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Selected Presentations

2019	Oral presentation at the Gordon Research Conference on Molecular Mechanisms in Evolution, Stonehill College, Easton, MA, USA Oral presentation at <i>Israel Society for Microbiology</i> annual meeting, Weizmann Institute Oral presentation at the workshop on <i>Socio-Technological Evolution of the Human Species</i> , Safed, Israel
2018	Invited speaker at the <i>Genome Evolution Conference</i> , Weizmann Institute
2017	Oral presentation at the <i>Evolgenome</i> seminar, Stanford University * Poster at the <i>Gordon Research Conference</i> on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA * Oral presentation at <i>Israel Society for Microbiology</i> annual meeting. * Oral presentation at <i>FISEB / ILANIT</i> , Eilat.
2016	Seminar at the Instituto Gulbenkian de Ciência, Portugal.
2015	Oral presentation at the Gordon Research Conference on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA * Poster at the " <i>Forecasting Evolution?</i> " SFB 680 conference in Lisbon, Portugal * Seminar at the Institute of Science and Technology, Austria * Short oral presentation at the <i>Two2Many</i> Systems Biology Conference, Weizmann Institute
2013	Poster at <i>ESEB 2013</i> in Lisbon, Portugal * Poster at the <i>Gordon Research Conference</i> on Biological Mechanisms in Evolution, Stonehill College, Easton, MA, USA * Oral presentation at the 5th Annual <i>SIDEER Graduate Symposium</i> , Ben-Gurion University of the Negev, Sede-Boqer Campus
2012	Oral presentation at the 1st Graduate Students Conference in <i>Genetics, Genomics and Evolution</i> , Ben-Gurion University of the Negev. DOI: 10.6084/m9.figshare.96049 . * Oral presentation at PopGroup 45 in Nottingham, UK. DOI: 10.6084/m9.figshare.95939 .
2011	Poster at <i>ESEB 2011</i> in Tubingen, Germany. F1000 Posters 2011, 2: 1484.
2010	Poster at <i>SMBE 2010</i> in Lyon, France.
as undergrad	Poster at <i>MMSB</i> in Tel Aviv, Israel, 2010 – Best poster award

Other Academic Activities

Reviewer 2011–	<p>PLOS Genetics</p> <p>Proceeding of the Royal Society B</p> <p>Evolution</p> <p>Journal of Evolutionary Biology</p> <p>PLOS ONE</p> <p>Theoretical Population Biology</p> <p>Integrative Zoology</p> <p>Quarterly Review of Biology</p> <p>ReScience</p> <p>Israel Journal of Ecology & Evolution</p>
Co-organizer 2011-2014	BioMath Student Journal Club , Tel Aviv University
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
Outreach	<p>Mentoring at DjangoGirls Ra'anana, June, 2019</p> <p><i>Dive into Scientific Python</i> — Oral presentation, DataTalks meetup, Herzeliya, March 2017 — YouTube</p> <p>* <i>How to study evolution using Scientific Python</i> — Oral presentation, PyCon Israel 2016, Tel Aviv, May 2016 — YouTube</p> <p>* <i>Evolution and mutation in stressful times</i> — Oral presentation, The Evolution Series, Tel Aviv University Botanical Gardens, May 2013 — PDF</p>