Nimrod Shaham

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Education

<u>2012 - 2018</u>: Hebrew university of Jerusalem, **PhD studies in physics**. Branch: Theoretical neuroscience. Thesis title: "Working memory of continuous parameters in noisy neural networks". **Advisor: Dr. Yoram Burak**.

<u>2010 - 2012</u>: Hebrew university of Jerusalem, **MSc studies in physics** . Branch: High energy astrophysics. Thesis title: "On the composition and anisotropy of ultra-high energy cosmic rays". **Advisor: Prof. Tsvi Piran**. Final grade: 93.61/100 .

<u>2007 - 2010</u>: Hebrew university of Jerusalem, **BSc studies in physics and mathematics**. Final G.P.A: 93.21/100, *Magna Cum Laude* .

Professional Experience

<u>2018 - present</u>: **Swartz post-doctoral fellow,** Center for Brain Science, Harvard university. Developing mathematical models for learning and memory in neural networks. **Advisors: Prof. Haim Sompolinsky and Prof. Gabriel Kreiman**.

2019 - present: **Teaching assistant,** Harvard university.

<u>2010 - 2018</u>: **Teaching assistant,** Racah institute of physics, the Hebrew university of Jerusalem.

<u>2009 - 2010</u>: **Research assistant,** Prof. Eran Sharon's lab, Racah institute of physics, the Hebrew university of Jerusalem. Applying differential geometry tools in the study of elasticity in thin sheets.

<u>2007</u>: **Security guard and medic,** accompanied local and foreign tourist groups in Israel.

<u>2003 - 2006</u>: **Full military service,** Interviewer and interview instructor, the Israeli defense force.

Computer Skills

Python, Julia, MATLAB, Mathematica. Document writing: Microsoft Office, LaTeX/Beamer/LYX.

Scholarships and Awards

<u>2020</u>: Brains, Minds and Machines award for excellent poster presentation. <u>2019</u>: Harvard University distinguished teachers list.

<u>2018</u>: Swartz post doctoral fellowship, Center for Brain Science, Harvard university.

<u>2018</u>: ELSC brain science center post doctoral scholarship.

<u>2018</u>: ELSC brain science center travel scholarship for participating in the Simons Institute's Representation, Coding and Computation in Neural Circuits Workshop.

2012, 2018: Physics department award for excellence in teaching.

<u>2013-2018</u>: Science faculty list of excellent teachers.

<u>2016, 2017</u>: ELSC brain science center travel scholarship for participating in Cosyne conference.

<u>2015, 2017</u>: Science faculty award for best poster presentation.

<u>2015</u>: Jerusalem brain science community travel scholarship for participating in the SFN conference.

<u>2010-2015</u>: Rudin foundation scholarship for excellent graduate students.

<u>2010</u>: Physics department scholarship for distinguished new graduate students.

<u>2010</u>: BSc *Magna Cum Laude*.

<u>2007 - 2009</u>: Dean's list of distinguished students.

Peer-reviewed conference presentations

1. Shaham, Nimrod; Chandra, Jay; Kreiman, Gabriel and Sompolinsky, Haim. (2020). Continual learning, replay and consolidation in a forgetful memory network model. Cosyne Abstracts 2020, Denver, CO.

2. Ben-Shushan, Nadav; Shaham, Nimrod; Joshua, Mati and Burak, Yoram. (2020). A Central Source for Fixational Eye Drifts. Cosyne Abstracts 2020, Denver, CO.

3. Shaham, Nimrod; Salhov, Alon and Burak, Yoram. (2019). Biologically plausible mechanism for noise resilience in continuous parameter working memory. Cosyne Abstracts 2019, Lisbon, Portugal.

4. Shaham, Nimrod; Ben-Shushan, Nadav and Burak, Yoram. (2018). Neural adaptation may explain anomalous diffusion in fixational eye motion. Cosyne Abstracts 2018, Salt lake city, UT.

5. Shaham, Nimrod and Burak, Yoram. (2016). Continuous parameter working memory in a balanced chaotic neural network. Cosyne Abstracts 2016, Salt lake city, UT.

Talks, Conferences and Schools

<u>2020</u>: MIT center for brains, minds and machines summer school (poster).

<u>2020</u>: Israeli Society for Neuroscience yearly convention (poster).

<u>2019</u>: MIT center for brains, minds and machines (Invited talk).

<u>2019</u>: Gatsby tri-center meeting, London (Invited talk).

<u>2018</u>: Advanced methods in theoretical neuroscience workshop, Gottingen (poster).

<u>2018</u>: Leopoldina-Israel Academy- Neuroscience Symposium, Berlin (poster).

<u>2018</u>: Computational Neuroscience seminar, Center for Brain Science, Harvard university (Invited talk)

<u>2018</u>: Systems club, Harvard medical school (Invited talk)

<u>2018</u>: Simons Institute's Representation, Coding and Computation in Neural Circuits Workshop, Berkeley university.

<u>2017</u>: Invited talk: Israeli Society for Neuroscience yearly convention.

<u>2017</u>: Invited talks: Trax, Walkme (international Hi-tech companies).

<u>2016</u>: Racah physics institute yearly retreat (talk).

<u>2016</u>: Israeli Physical Society yearly convention (talk).

<u>2015</u>: American Society for Neuroscience yearly convention (poster).

<u>2015</u>: NCCD2015 computational neuroscience conference (poster).

<u>2014</u>: Methods in Computational Neuroscience course, Woods hole, MA, US.

<u>2014</u>: Israeli Society for Neuroscience yearly convention (poster).

<u>2010 - 2014</u>: Israeli Physical Society yearly convention.

<u>2011</u>: Dublin summer school on High Energy Astrophysics.

Special academic activities

Co-founder and organizer of a weekly joint MIT-Harvard theoretical neuroscience journal club.

Supervising undergraduate and graduate students doing research projects in Harvard university.

Co-supervisor for two undergraduate students who did fruitful research projects during my PhD.

Was active member of a group of Neuroscientists and psychiatrists led by Prof. Avraham Peled and Dr. Oren Shriki, worked on applying computational tools for diagnosis and treatment of mental disease.

Took active part in the Hebrew university graduate students' economics club.

Publication list

1. Shaham N, Burak Y (2017) Slow diffusive dynamics in a chaotic balanced neural network. PLOS Computational Biology 13(5): e1005505.

2. Shaham, N., Piran, T. (2013). Implications of the Penetration Depth of Ultrahigh-Energy Cosmic Rays on Physics at 100 TeV. Physical Review Letters, 110(2), 021101.