Omri Har-Shemesh
Curriculum Vitæ

Personal Data

Place and Date of Birth:	Beer-Sheva, Israel | 14 April 1982
Citizenships:	Israeli, German
Address:	Talbotstraat 71, 1087 DE, Amsterdam, The Netherlands
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Education

January 2013 - Present
PhD Candidate, Computational Science Department, **University of Amsterdam**
Subject: "Information Processing in Multilevel Complex Systems"

April 2010 - Feb 2012
Dec 2010 - Feb 2012
Master of Science in Physics, **Heidelberg University**, Germany **and**
Max-Planck-Institute for Nuclear Physics, Heidelberg, Germany
Subject: "Peak intensity measurement of strong laser pulses using nonlinear Thomson scattering"
Advisor: PD Dr. Antonino Di Piazza
GPA: 1.1 (Excellent)

Oct 2007 - Nov 2009
Studies towards a direct PhD. in Physics, **Hebrew University**, Jerusalem, Israel
Subject : "Quantum Field Theory (Seiberg Duality in Chern-Simons Theory)"
Advisors: Prof. Eliezer Rabinovici, Prof. Amit Giveon
Remarks: Discontinued my studies and moved to the University of Heidelberg
GPA: 94 / 100

Oct 2003 - Aug 2006
Bachelor of Science in Physics, **Tel-Aviv University**, Israel
GPA: 91 / 100, Graduated Magna Cum Laude

Schools, Talks and Conferences

Sep 2016	Conference on Complex Systems Contributed Talk: **"Regime shifts using Fisher Information: Balinese Subaks"**, O. Har-Shemesh
Sep 2016	Conference on Complex Systems Contributed Talk: **"Electric vehicle charging as complex adaptive system - information geometric approach"**, O. Har-Shemesh
Nov 2014	Complexity Institute, Nanyang Technological University, Singapore Invited Talk: **"What is Fisher Information and What can you do with it?"**, O. Har-Shemesh
Sep 2014	European Conference on Complex Systems Contributed Talk: **"Phase Transitions in the Gray-Scott Model from Fisher Information"**, O. Har-Shemesh
July 2013	3rd European Ph.D. School on Mathematical Modeling of Complex Systems, Technological Educational Institute, Crete, Greece.
Oct 2011	10th International Symposium on Ultrafast Laser Science (ISUILS 10) Poster Presentation: **"Intensity Measurement of Strong Laser Beams Using Multi-Photon Thomson Scattering"**, O. Har-Shemesh and A. Di Piazza
March 2011	75th Annual Meeting of the **German Physical Society** Poster Presentation: **"Classical and Quantum Radiation Reaction Effects in Intense Laser Fields"**, O. Har-Shemesh, A. Di Piazza, K. Z. Hatsagortsyan and C. H. Keitel
Dec 2008	Winter School - **Physics at the age of the LHC**, at the Institute for Advanced Studies, the Hebrew University

Publications

[1] O. Har-Shemesh and A. Di Piazza, **"Peak intensity measurement of relativistic lasers via nonlinear Thomson scattering"**, Opt. Lett. **37**, 1352, (2012), arXiv:1111.6002v2 [physics.optics]

[2] S. Meuren, O. Har-Shemesh and A. Di Piazza, **"Tests of classical and quantum electrodynamics with intense laser fields"**, Book Chapter to appear in "Progress in Ultrafast Intense Laser Science X"

[3] T.I. Jung, F. Vogiatzian, O. Har-Shemesh, C.P. Fitzsimons and R. Quax **"Applying Information Theory to Neural Networks: From Theory to Experiments"**, Entropy 16 (11) 5721-5737 (2014)

[4] O. Har-Shemesh, R. Quax, B. Miñano, A. G. Hoekstra and P.M.A. Sloot **" Nonparametric estimation of Fisher information from real data "**, Phys. Rev. E. **93**, 023301 (2016), arXiv:1507.00964

[5] O. Har-Shemesh, R. Quax, A. G. Hoekstra and P.M.A. Sloot **" Information geometric analysis of phase transitions in complex patterns: the case of the Gray-Scott reaction–diffusion model "**, Journal of Statistical Mechanics: Theory and Experiment **4**, 043301 (2016), arXiv:1512.02077

Awards

Oct 2011	**"The Best Poster Presenter Award"** for the presentation titled "Intensity measurement of strong laser beams using multi-photon Thomson scattering" at **ISUILS 10**.

Teaching Experience

Oct 2008 - Jul 2009	Teaching Assistant at the Hebrew University: 77101 - **Classical Mechanics** - First-year course in Physics 77401 - **Analytical Electrodynamics** - Second-year course in Physics 77856 - **The SM of Elementary Particles** - Graduate course in Physics

Non-Academic Work Experience

Sept 2012 - Dec 2012	Python Developer *TravelBird*
Nov 2009 - Sept 2012	Physicist and Programmer *S-DH GmbH* S-DH GmbH is a company manufacturing Neutron guide elements. I have been involved in both the practical and theoretical aspects of the manufacturing process. Since February 2011, I am developing a new database and project management system for the company.
Oct 2000 - Oct 2003	Communications Sergeant and Programmer *Israeli Defense Force, Northern Headquarters* I served the obligatory three year military service in the Israeli army as a communications sergeant in a war-room at the northern headquarters, which I later commanded. I also worked as a programmer, developed several applications, one of which was suggested for a prize.

Languages

Hebrew:	Mothertongue
English:	Business Fluency (TOEFL: 110/120)
German:	Very Good Knowledge
Dutch:	Very Basic Knowledge

Computer Skills (Partial List)

Programming Languages:	Python (pandas, matplotlib, scikit-learn, ...), JavaScript (qooxdoo, D3, jquery, leaflet, ...), PHP (basic knowledge), Fortran 90 (basic knowledge), C, Pascal, Delphi, Visual Basic, VBA, SQL, HTML,...
Mathematical Tools:	NumPy, SciPy, Sage, Mathematica, MATLAB
Other Tools:	Git, Mercurial, LaTeX, GVim, SED, AWK

Interests and Activities

Parenting, Rock Climbing, Photography, Open-Source, Programming, Complexity, Non-linear dynamics