

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 MASTER OF SCIENCE IN PHYSICS, **Heidelberg University**, GERMANY and
DEC 2010 - FEB 2012 **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

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| 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](#)

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 - *Present* 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, JAVASCRIPT (QOOXDOO FRAMEWORK, JQUERY), PHP, 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, PYXPLOT, GNU PLOT

INTERESTS AND ACTIVITIES

ROCK CLIMBING, PHOTOGRAPHY, OPEN-SOURCE, PROGRAMMING, COMPLEXITY, NON-LINEAR DYNAMICS