

CONTACT INFORMATION

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EDUCATION

University of Southern California; Los Angeles, CA, USA

Aug 2018 - Present

PhD Student, Computer Science

Research Interests: Knowledge Graphs, Semantic Web, Linked Open Data, Machine Learning, Information Extraction, Information Technology, Computer Networks

Tel Aviv University; Tel Aviv, Israel

Feb 2011 - Jan 2015

BSc, Electrical and Electronic Engineering, *magna cum laude* (Cumulative GPA: 93.33/100)

Major Coursework Areas: Computer-Science, Communications and Electronic Devices

Honors Thesis:

- “*IPoIB Router in the Switch-X Product Family: from Firmware Design to Implementation of the Verification Environment and the Debug Tools*” (Supervisor: Mr. Ami Marelli)

Additional Research:

- “*Physical Design of 12-bit Two’s Complement Adder*” (Supervisors: Prof. Yosi Shacham, Mr. Avi Efrati)
- “*Logic Design of full simplified DLX using FPGA*” (Supervisors: Mrs. Liron David, Mr. Marko Markov)

Israel Arts and Science Academy (IASA); Jerusalem, Israel

Sep 2007 - Jun 2010

High School Major in Physics, Computer Science and Chemistry, *cum laude*

ACADEMIC EXPERIENCE

Information Sciences Institute; Marina del Rey, CA, USA

Aug 2018 - Present

Research Assistant, *Center on Knowledge Graphs*

- Working on knowledge graphs and the semantic web with an emphasis on data normalization as a means to solve complex information integration problems
- Investigating new methodologies to leverage machine learning techniques and knowledge graphs to establish automatic data extraction tools for scientific modeling

PROFESSIONAL EXPERIENCE

Apple; Herzliya, Israel

Jan 2018 - Jun 2018

Embedded Firmware Engineer, *Flash Storage Software Department*

- Designed and developed complex software modules for ultra high performance, real-time embedded systems in a multiprocessor environment for Apple products
- Defined firmware features and led HW-FW integrations
- Completed vertical integration with other modules in storage stack (i.e. drivers, file-system)

Mellanox Technologies; Tel Aviv, Israel

2011 - 2017

Senior Firmware Engineer & Team Leader, *Switch Silicon Core Department* **Apr 2017 - Jun 2017**

- Managed team of 5 engineers
- Led the 100GbE Switch Systems firmware development process and software infrastructure activities - an operation involving 16 engineers
- Developed a distributed functional testing environment; debug tools and performance testing in C++ in Unix for both Ethernet and InfiniBand fabrics in OSI Data-Link and Network layers
- Implemented complex verification architectures consisting of static and dynamic analysis
- Delivered technical presentations to 50+ engineers and developers from various teams including: software, hardware, production, and qualification
- Awarded for excellence and ranked “Superior” (top 5% out of 3000)

Team Leader Firmware Engineer, *Switch Silicon Core Department*

May 2015 - Mar 2017

- Managed team of 3 engineers
- Contributed to end-to-end development and defined version-release procedures for the company's 100GbE Switch products
- Conducted personal training, code reviews; defined coding-style and methodologies of software engineering for team of 30
- Optimized shared library cross-platform code, resulting in 40% reduction in project compilation time for 90+ department developers
- Led full silicon bring-up process, both Pre-Silicon and Post-Silicon stages

- Negotiated integration process with leaders of partner companies such as Cumulus and Microsoft
- Supervised remote testing processes operating in Beijing (China), Seattle and Sunnyvale (US)
- Interviewed and effectively participated in the hiring and termination of employees

Firmware Engineer, *Switch Silicon Core Department*

Mar 2014 - Apr 2015

- Achieved 2nd place in Hackathon with "Scaling FW Switch Reference Model to Higher Layers"; The simulation tool saved up to 50% time in FW development cycle & customer support
- Created training-program for new employees, including dedicated code library and practical tasks
- Led the planning and priorities coordination procedure with software architecture and SDK teams
- Developed "Stress" tool that has become major tool for system production/screening, power measurements and debug process
- Conducted daily technical and verification-architectural guidance and coding assistance

Firmware Student, *Switch Silicon Core Department*

Oct 2011 - Feb 2014

- Developed ANSI-C compiler-specific code to run on Switch Systems RISC
- Managed continuous support and optimization in Switch System Python-based regression scripts
- Implemented cross-platform error-injection and functional-validity tool used by both departments of Switch Systems and Channel Adapters
- Collaborated with chip-design and software engineers to create a Post-Silicon Random Verification Environment for the 56GbE and EDR (100Gbps Infiniband) technologies

INTERNSHIPS

Research Science Institute; Cambridge, MA, USA

2009

Research Intern (Computer-Science)

- Studied Statistical Natural Language Processing, Automatic Speech Recognition and Machine Learning; performed model training and testing with Python
- Wrote paper titled "*Improving Text-Independent Speaker Identification Performance Using Gaussian Mixture Speaker Models*" under direction of Dr. David Palmer (HP Autonomy (Virage), Inc).
- Conducted on-campus coursework in scientific theory and off-campus work in scientific research over 6 weeks under sponsorship of the Center for Excellence in Education and MIT

AWARDS AND SCHOLARSHIPS

Modeling and Managing Complicated Systems Institute; Pittsburgh, PA, USA

2019

Recipient of the Ford Foundation MWS19 Graduate Student Travel Grant (value \$1,600)

Tel Aviv University; Tel Aviv, Israel

2013

Faculty Deans List of Outstanding Undergraduate Students

Tel Aviv University; Tel Aviv, Israel

2013

Recipient of the Freescale Semiconductor Israel Excellence Scholarship (value \$1,200)

CONFERENCES AND OFFICIAL EVENTS

The 15th IEEE eScience Conference; San Diego, CA, USA

2019

Workshop on Advanced Knowledge Technologies for Science in a FAIR World (AKTS)

- Published paper and delivered an oral presentation at the workshop

The 2019 Modeling the World's Systems Conference; Washington, D.C., USA

2019

Conference on the technology and policy of modeling and managing interacting complex systems

- Published paper and delivered an oral presentation and poster

The 2016 VSF Interoperability Event; The Woodlands, TX, USA

2016

Video Service Forum annual video broadcast networking interoperability event

- Performed testing of HBRMT (High Bit Rate Media Transport over IP)
- Studied extensively video broadcast networking technologies and standards

Haifa Verification Conference (HVC); Haifa, Israel

2015

Haifa Verification Conference hosted in IBM Research & Development Labs

The 26th IBTA InfiniBand and RoCE Plugfest; Durham, NH, USA

2014

Infiniband Trade Association event to measure compliance of vendors with the IBTA specifications

- Performed interoperability testing of Infiniband and RDMA over Converged Ethernet
- Collaborated with various vendors to improve testing plan design

EXTRACURRICULAR ACTIVITIES

PhD Student Supervisor, IUSSTF at USC; Los Angeles, CA, USA

2019

- Supervised and mentored an intern student (IIT Delhi) in the Indo-U.S. Science and Technology Forum (IUSSTF) at USC-ISI working on leveraging semantics to geospatial data using reverse-geocoding services (i.e. OpenStreetMap), instance matching and ranking algorithms

”Midburn”: Israeli Burning Man Regional Organization; Negev, Israel

2016 - 2018

- Supervised art installation procedures
- Contributed code to development of ”Dreams”, an open-source platform to help community plan co-created events

”Tira Academics”: Students Volunteering Association; Tira, Israel

2013 - 2017

- Co-initiated association to expand academic opportunities for freshmen and high-school students
- Tutored freshmen engineering students, provided 1-on-1 guidance with Algebra, Calculus, C/Python programming and conducted workshops on a quarterly basis

Event Production Team (THP) at IASA; Jerusalem, Israel

2007 - 2010

- Led crew of 15 students
- Supervised and executed complex lighting and sound constructions and operations
- Wrote manual delineating guidelines and technical work with sound and light equipment

Senior-Year Fund-Raising Team at IASA; Jerusalem, Israel

2009 - 2010

- Operated as head of team; led operations involving 50 students
- Produced fund-raising activities totaling > \$5,000
- Developed online-market web-application enabling students to purchase and exchange items

”Sal Gal”: Basketball Program for Disabled Youth; Jerusalem, Israel

2008 - 2010

- Led weekly activities and sports games for physically challenged and disabled basketball players

”Shema”:

2007 - 2008

A Therapeutic Educational Center for Students with Hearing Impairment; Jerusalem, Israel

- Led weekly activities and educational workshops for physically challenged children in ages 8-10

PUBLICATIONS

B. Shbita, B. Vu, D. Feldman, M. Pham, A. Rajendran, C. Knoblock, J. Pujara, and Y. Chiang. Creating a FAIR Data Catalog to Support Scientific Modeling. Workshop on Advanced Knowledge Technologies for Science in a FAIR World (AKTS), 2019.

B. Shbita, A. Rajendran, J. Pujara, and C. Knoblock. Parsing, Representing and Transforming Units of Measure, in Modeling the World’s Systems, 2019.

LANGUAGES

English • Arabic • Hebrew • Russian

TECHNICAL SKILLS

- Python, C, C++, C#, MATLAB, VHDL, Cadence PSpice and Assura (Virtuoso)
- RDF, Turtle and SPARQL
- SQL, PostgreSQL and PostGIS
- Unix shell, Bash and Perl scripting
- Ruby on Rails, HTML, CSS, Node.js and Flask
- Win32 applications, Dot-Net C# Web, Console applications and Batch scripting
- PC platforms - MS Visual Studio, Eclipse, Adobe Photoshop, Adobe Premiere and Ableton Live

HOBBIES AND INTERESTS

Graphic Design • Figure Drawing • Music Production • Soccer • Combined Martial Arts