

# Basel Shbita

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## PROFESSIONAL EXPERIENCE

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**Apple; Herzliya, Israel** **2018**

***Embedded Firmware Engineer*** **2018**

- Design, develop and implement complex SW modules for Apple products

**Mellanox Technologies; Tel Aviv, Israel** **2011-2017**

***Senior Firmware Engineer, Switch Silicon Core Department*** **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 Data-Link and Network layers of the OSI
- Implemented complex verification concepts and architectures consisting of static and dynamic analysis
- Conducted 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)

***Technical Lead Firmware Engineer, Switch Silicon Core Department*** **2015-2017**

- 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*** **2014-2015**

- Achieved 2<sup>nd</sup> place in Hackathon with "Scaling FW Switch Reference Model to Higher Layers"; Project introduced simulation tool saving up to 50% time in development cycle & customer support
- Created training-program for new employees, including dedicated code library and practical task sets
- 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*** **2011-2014**

- 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

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### Research Science Institute; Cambridge, MA, USA

2009

#### Research Intern (Computer-Science)

- Chosen 1:100 for admission to represent Israel; Program has 1-2% acceptance rate worldwide with total of 30 international and 50 US high schools students chosen
- Conducted on-campus course work in scientific theory and off-campus work in scientific research over 6 weeks. The program is under sponsorship of the Center for Excellence in Education and hosted by MIT
- 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).

## EDUCATION

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### Tel Aviv University; Tel Aviv, Israel

2011-2015

#### B.Sc., Electrical and Electronic Engineering, *magna cum laude* (Graduation, June 2015)

Cumulative GPA: 93.33/100

Specialization Areas: *Computer-Science, Communications and Electronic Devices*

Honor's 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

2007-2010

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

- Chosen 1:80 for admission following successive interviews and selection processes

Research Work:

- “*Solvent Surface Tension effect on the Dance Phenomenon of Dissolved Naphthalene Crystals During Evaporation*” (Supervisors: Dr. Tertsia Gross and Mrs. Sarah Perach)
- “*Kiosk Management: A Thesis in Systems Design and Programming with Web Services*” (Supervisor: Mrs. Inessa Bolotin)

## VOLUNTEER ACTIVITIES

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### “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 local freshmen and high-school students
- Tutored freshmen engineering students and mentored those with academic and social difficulties
- Provided 1-on-1 guidance with Algebra, Calculus, C/Python programming
- Conducted workshops on a quarterly basis
- Co-managed a voluntary exhibition for book exchange

### Event Production Team 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
- “She’ma” A Therapeutic Educational Center for Students with Hearing Impairment; Jerusalem, Israel** **2007-2008**
- Led weekly activities for physically challenged children ages 8-10
  - Created educational workshop programs for pupils

## AWARDS AND SCHOLARSHIPS

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- Tel Aviv University; Tel Aviv, Israel** **2013**  
*Faculty Dean’s List of Outstanding Undergraduate Students*
- Tel Aviv University; Tel Aviv, Israel** **2013**  
*Recipient of the “Freescale Semiconductor Israel” Excellence Scholarship (value \$1,200)*
- Association of Mathematics Activities in Israeli Arab Schools; Nazareth, Israel** **2004-2007**  
*1 Gold, 2 Bronze Medals in the National Mathematics Competition*

## CONFERENCES AND OFFICIAL EVENTS

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- The 2016 VSF Interoperability Event; The Woodlands, TX, USA** **2016**  
*VSF’s (Video Service Forum) annual video broadcast networking interoperability event*
- Acted as Mellanox representative and took part in real-time debugs
  - 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**  
*HVC (Haifa Verification Conference) hosted in IBM Research & Development Labs*
- The 26<sup>th</sup> IBTA InfiniBand and RoCE Plugfest; Durham, NH, USA** **2014**  
*IBTA’s (Infiniband Trade Association) event to measure compliance of vendors with the IBTA specifications*
- Acted as Mellanox representative and took part in real-time debugs
  - Performed interoperability testing of Infiniband and RDMA over Converged Ethernet
  - Collaborated with various vendors to improve testing plan design

## LANGUAGES

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- Arabic (Native), English (Fluent), Russian (Fluent), Hebrew (Fluent)

## TECHNICAL SKILLS

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- C, C++, C#, Python, MATLAB, VHDL, Cadence PSpice and Assura (Virtuoso)
- Unix shell, Bash and Perl scripting
- Ruby on Rails, HTML, CSS, JS and SQL
- 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 (Please see my website at: [basels.github.io](https://basels.github.io))

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- Arduino
- Processing IDE
- Graphic Design
- Music Production (Streaming on Soundcloud)
- Combined Martial Arts (CMA)
- Soccer