



Basel Shbita, Ph.D. [he/him/his](#)

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## EDUCATION

### UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

#### PH.D., COMPUTER SCIENCE

2018 - 2024 | Los Angeles, CA, USA  
Research Interests: Knowledge Graphs, Machine Learning, Information Extraction & Integration, Semantic Web

#### M.Sc. COMPUTER SCIENCE

2018 - 2023 | Los Angeles, CA, USA

### TEL AVIV UNIVERSITY

#### B.Sc. ELECTRICAL ENGINEERING

2011 - 2015 | Tel Aviv, Israel

## AWARDS

### UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

University Outstanding Teaching Assistant Award (Highest Achievement, grant valued \$2k)  
2022 | Los Angeles, CA, USA

### ALEXA PRIZE SOCIALBOT GRAND CHALLENGE 4

Team research grant valued \$250k as part of the competition (Semi-finalists)  
2021 | Seattle, WA, USA

### MOMACS INSTITUTE

Ford Foundation Graduate Student Grant (\$1.6k)  
2019 | Pittsburgh, PA, USA

### TEL AVIV UNIVERSITY

Faculty Dean's List of Outstanding Undergraduate Students  
2013 | Tel Aviv, Israel

"Freescale Semiconductor" Excellence Scholarship (\$1.2k)  
2013 | Tel Aviv, Israel

## SKILLS

### LANGUAGES

English  
Arabic  
Hebrew  
Russian

### PROGRAMMING

Python, C, C++, C#, SWI-Prolog, MATLAB, Assembly • RDF/OWL, SPARQL, SQL, PostgreSQL, PostGIS • PyTorch, TensorFlow, Keras, scikit-learn, pandas, SciPy, NumPy, Matplotlib, Jupyter, Flask • Ruby on Rails, HTML, CSS, JavaScript • Git • Docker

## EXPERIENCE

### IBM RESEARCH

2024 - PRESENT

#### RESEARCH SCIENTIST, ENTERPRISE DATA & GOVERNANCE FOR AI MODELS

June 2024 - Present | Almaden, San Jose, California, USA

- Working on generative AI & machine learning model management as part of the WatsonX project
- Integrating knowledge graphs (KGs) with large language models (LLMs) to optimize data integration in the domain of business transformation with focus on methods & techniques for semantic annotation of semi-structured & unstructured data

### INFORMATION SCIENCES INSTITUTE

2018 - 2024

#### RESEARCH ASSISTANT, CENTER ON KNOWLEDGE GRAPHS

Aug 2018 - May 2024 | Marina del Rey, CA, USA

- Worked on knowledge graphs & the semantic web as a means to solve complex information integration problems by leveraging machine & deep learning
- Partook in several projects: MinMod (AI for mineral data), Linked Maps (constructing KGs for spatio-temporal data), MINT (data integration for scientific modeling), Table Understanding (automated semantic interpretation of tables) & Alexa Prize Socialbot Grand Challenge 4 (knowledge integration for chatbot)

### IBM RESEARCH

2022

#### RESEARCH INTERN, RE\*THINK ENTERPRISE

May - Aug 2022 | Almaden, San Jose, California, USA

- Designed, implemented & evaluated a user-assisted automatic & fully functional pipeline to convert unstructured client requirements textual data into a contextualized knowledge graph

### GENERAL ELECTRIC GLOBAL RESEARCH

2021

#### RESEARCH FELLOW INTERN, ANALYTICS SOFTWARE & KNOWLEDGE DISCOVERY

May - Aug 2021 | Niskayuna, NY, USA (online)

- Designed, implemented & evaluated an infrastructure for automated generation of annotation rules for control concepts in Cyber-physical Systems SW using ILP & Semantic Technologies

### APPLE

2018

#### EMBEDDED FIRMWARE ENGINEER, FLASH STORAGE SOFTWARE DEPARTMENT

Jan - Jun 2018 | Herzliya, Israel

- Designed & developed complex SW modules for ultra high performance, real-time embedded systems in a multiprocessor environment for Apple products
- Defined firmware features & led vertical integration in storage stack (i.e. drivers, file-system)

### MELLANOX TECHNOLOGIES

2011 - 2017

#### SENIOR FIRMWARE ENGINEER & TEAM LEADER, SWITCH SILICON CORE DEPARTMENT

Apr - Jun 2017 | Tel Aviv, Israel

- Managed team of 5 engineers & led the 100GbE Switch Systems firmware development process & verification activities - an agile operation involving 16 engineers
- Developed a distributed functional testing environment, debug tools & performance testing in C++ in Unix for both Ethernet & InfiniBand fabrics in Data-Link & Network layers of the OSI

#### TEAM LEADER FIRMWARE ENGINEER, SWITCH SILICON CORE DEPARTMENT

May 2015 - Mar 2017 | Tel Aviv, Israel

- Managed team of 3 engineers & led the 100GbE Switch products full silicon bring-up
- Conducted training, code reviews; defined coding-style of software engineering for 30+ engineers
- Optimized shared library cross-platform code, resulting in ~40% reduction in project compilation time for 90+ department developers
- Supervised remote testing & integration processes operating in China & USA

#### FIRMWARE ENGINEER, SWITCH SILICON CORE DEPARTMENT

Oct 2011 - Apr 2015 | Tel Aviv, Israel

- Developed ANSI-C compiler-specific code to run on Switch Systems RISC
- Implemented simulation tool to reduce ~50% time in firmware development cycle

### HP AUTONOMY (VIRAGE)

2009

#### COMPUTER SCIENCE RESEARCH INTERN, ADVANCED TECHNOLOGY GROUP

May - Aug 2009 | Cambridge, MA, USA

- Researched Statistical Natural Language Processing, Speech Recognition & Machine Learning as part of the Research Science Institute (RSI) under the sponsorship of CEE and MIT