



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

RESEARCH SCIENTIST, AI RESEARCH

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

- Working on generative AI & large language models (LLMs) as part of the Granite project
- Developing debugging toolkits for LLMs to streamline resolution across workflows
- Researching methods for synthetic data generation to enhance model robustness & evaluation
- Worked on model-agnostic & customizable solutions to safeguard LLM deployments

2024 - PRESENT

INFORMATION SCIENCES INSTITUTE

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)

2018 - 2024

IBM RESEARCH

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

2022

GENERAL ELECTRIC GLOBAL RESEARCH

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

2021

APPLE

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)

2018

MELLANOX TECHNOLOGIES

SENIOR FIRMWARE ENGINEER & TEAM LEAD, 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

2011 - 2017

TEAM LEAD FIRMWARE ENGINEER, SWITCH SILICON CORE DEPARTMENT

Apr 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 - Mar 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)

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

2009