

I am a software and hardware engineer, a former startup founder with a background in computational physics, and a proven track record in software startups and the semiconductor industry. My expertise lies in backend development, as well as experimental and theoretical physics, simulation tools, and chip design. I am a highly capable researcher with Master's and Doctorate degrees focused on Computational Physics.

Languages and Technologies

Languages and frameworks: JavaScript, TypeScript, Ruby on Rails, Node.js, Express.js, React, Angular

Technologies and tools: PostgreSQL, MongoDB, Kafka, GraphQL

Hardware design: Verilog, VHDL, Xilinx FPGA

Computational analysis: MATLAB, Perl, Synopsys TCAD

Career Experience

Contractor Software Engineer

Nov 2023 - Current

- Evaluating, training, and writing test cases for generative AI models across various technologies, protocols, and programming languages such as NextJS, Drizzle, React, Angular, Typescript, and SQL.

Odeko, NY | B2B

Feb 2022 – Dec 2023

Senior Full Stack Software Engineer | Pricing Team

- Defined, designed, implemented, and rolled out a pricing management microservice for e-commerce catalog items using React and Ruby on Rails in combination with PostgreSQL, GraphQL, and Kafka. Other teams adopted the service which reduced their workload by 25%.
- Improved maintainability and functionality of the custom pricing engine by reverse engineering existing legacy monolith code, isolating it into different domains, cutting off legacy 3rd party tools, and migrating to standalone services.
- Built and rolled out an internal accounting monitoring microservice using Ruby on Rails and PostgreSQL that reduced failed payments by \$829k.
- Implemented a promotion engine using Voucherify API.
- Skills: Ruby on Rails, Node.js, React, PostgreSQL, Kafka, GraphQL, NetSuite, Voucherify

Academig, Germany | B2C

Mar 2017 – Aug 2021

Full Stack Software Engineer | Co-Founder

- Prototyped, conducted user interviews, and implemented a research-labs discovery platform using Angular, Node.js, Express.js, and MongoDB. Running over 50 campaigns for achieving production/solution fit and product/market fit.
- Led project management and sprint planning on a team of 5 part-time contractors, overseeing the platform's growth to 12K users.
- Built and rolled out an internal management tool used by all the contractors. The tools helped optimize the customer acquisition process and reduced the acquisition cost by more than 70%.
- Participated in the 2019 cohort of the Start Accelerator program in Switzerland.
- Skills: Node.js, Express.js, Angular, MongoDB, Heroku, Auth0, Stripe, Algolia, Pusher, GetStream

University of Erlangen-Nuremberg, Erlangen, Germany

Nov 2016 – Feb 2017

Visiting Research Scientist in Prof. Michael Thoss's group

- My work at the university was a continuation of the projects established at the Technion (below).

Technion - Israel Institute of Technology, Haifa, Israel

Nov 2015 – Dec 2016

Research Assistant in Prof. Uri Peskin's group

- Characterized 2 novel quantum memory device architectures. Pursued a patent application.
- Authored 2 publications.
- Mentored 3 graduate students.

Technion - Israel Institute of Technology, Haifa, Israel
Graduate research assistant (Ph.D.) in Prof. Uri Peskin's and Prof. Efrat Lifshitz's groups

Thesis title 'Modeling charge transport induced phenomena in colloidal double quantum dots and developing new probes for inter-dot interactions.'

- Developed novel open quantum systems models involving electronic and mechanical properties of double low-dimensional semiconductor crystals using the Quantum Master Equation algorithm.
- Conducted both theoretical and experimental studies. Organized the collaboration team responsible for synthesizing and characterizing a novel measurement setup of inter-quantum-dot interactions using Scanning Tunneling Microscopy (STM).
- Mentored 2 graduate students.
- Authored 4 publications as the first author.
- Skills: MATLAB, STM

Tel Aviv University, Tel Aviv, Israel
Graduate research assistant (M.Sc.) in Prof. Yossi Rosenwaks's group

Jul 2009 – Jul 2011

Thesis titled 'Vertical Junction Silicon Cells for Concentrating Photovoltaics.'

- Simulated a previously unexplored vertical solar cell configuration for high-concentration PV systems.
- Designed masks and fabricated a prototype in collaboration with Tower Semiconductor.
- Characterized the solar cell prototype using Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM) and tested efficiency at a high light concentration test facility setup.
- Serving as a teaching assistant for the VLSI course and an electrical engineering lab instructor.
- Skills: MATLAB, TCAD Sentaurus, AFM, SEM

Freescale Semiconductor (acquired by NXP), Tel Aviv, Israel
ASIC Design Engineer | B2B

Jan 2008 – Jul 2009

- RTL design of a Multi-Master Multi-Memory Interface IP core as part of the Memory Interface team. In charge of architecture and implementation according to ARM AXI standards and interfaced memories specifications.
- Integration of the Memory Interface module.
- Planned and implemented verification, testing, and documentation requirements.
- Skills: Verilog, Perl, Linux

Freescale Semiconductor (acquired by NXP), Tel Aviv, Israel
Verification Design Engineer | B2B

Jan 2006 – Dec 2007

- Brought up a System Verilog Assertion (SVA) verification environment for Multi-Master Multi-Memory Interface IP core, which uses the ARM AXI bus peripherals. Wrote checkers for module functionality, randomized configurations and inputs using constraints, created cover groups, and collected coverage.
- Established the System Verilog Assertion work methodology at the company level in collaboration with the in-house software development team.
- Skills: Verilog, Perl, Linux, SVA

Communication Lab at the Technion - Israel Institute of Technology, Haifa, Israel
FPGA Engineer

Apr 2004 – May 2005

- Implemented a GSM communication protocol using Xilinx FPGA design suite.
- Skills: VHDL, C++, DSP

Education

Doctorate (Ph.D.), Quantum chemistry, summa cum laude
Technion - Israel Institute of Technology, Israel (2015)

Master of Science (M.Sc.), Materials Engineering and Nanotechnologies, cum laude
Tel Aviv University, Israel (2011)

Bachelor of Science (B.Sc.), Electrical Engineering, cum laude
Technion - Israel Institute of Technology, Israel (2006)

Complete Publication list (8): [Google Scholar](#)