Inna Urim Polak innapolak@gmail.com 054-4540352

Education:

M.Sc. : **Weizmann Institute of Science, Computer Science and Applied Mathematics**, 2011–2014.
Advisor: Prof. Adi Shamir
Thesis title: "Using Random Codes to Improve Algorithms for Finding Near-Collisions in Hash-Functions".
The paper based on the thesis "Using Random Error Correcting Codes in Near-Collision Attacks on Generic Hash-Functions" was accepted to Indocrypt 2014 conference.

B.Sc. : **Tel Aviv University, Mathematic and Computer Sciences**, 2002–2006, part of the program of Academic Reserve (Atuda).
GPA: 89 in computer sciences (**cum laude**), 82 in mathematics.

High School : The Handasaim high school of Tel Aviv University. Bagrut average: 113
National Olympics in mathematics: Third place (2000), Citation (2001), Fourth place (2002).

Working Experience:

2015–2023 **Senior Algorithms developer in Teoco (member of the algorithms team)**

Developing optimization algorithms and analysis modules for cellular network operators.

- Researched, developed, and implemented algorithms in the fields of machine learning, data mining, computational geometry, and graph search & traversal.
- Developed algorithmic modules from scratch, having full cycle responsibility, from research to production.
- The product implementation is mainly in Java. Some of the research was done also in Matlab and SQL.
- Since August 2017: responsible for all the algorithms of the product in all stages.

Jun-Dec 2014 : **Software developer in Simplex (startup)**

Member of a small software team in an early-stages startup company. Working with NodeJS technology, coffeescript and JavaScript languages and PostgreSQL database as backend storage. In particular:

- Development of the server side and the client side of a system that provides services to the company's partners, end users and the analysts.
- Integration with external services, e.g. credit-card payment processors.
- Development of algorithms and tools to research and analyze the bitcoin network.

2011–2014 : **M.Sc. in computer sciences at Weizmann institute**

In the thesis and at the paper which is based on it, I showed theoretically and empirically how existent algorithms for finding near-collisions in hash function can be improved using decoding functions of random error-correcting codes. I also showed how decoding functions can be efficiently implemented for various versions of random codes based on random linear codes.
The practical aspect of the research included:

- Writing Matlab code for estimating the optimal parameters for the algorithm.
- Implementing my algorithms and the previous algorithms in C language in order to compare their running-time.
- Writing many other programs and scripts as part of the research to compute and present statistical properties of different codes, to compute lower bounds under different types of restrictions etc.

2009–2011 : **Software engineer in RAD Data Communication**

Software development in C language under VxWorks operating system for an embedded communication system in the infrastructures team. In particular:

- Working with SNMPv3 and SNMPv2 protocols.
- Development of infrastructure modules for communication systems, including the module of a main data-structure.

2007–2008 : **Software engineer in Horizon Semiconductors (startup)**

- Writing drivers for peripheral devices for an embedded system running on Linux operating system.
- Writing applications in user space that implement common device interface (CDI) for components in the system.
- Adaptations of the u-boot (Universal Boot Loader) to our system.

2005–2007 : **IDF service : Full-stack Engineer in IAF, Ofek unit**

Software development in two WEB-based operational systems using:

- Technology: Java, J2EE, JSP, Servlets, Struts, JavaScript, HTML
- Databases: Oracle SQL and PL-SQL language
- Operating systems: Windows, Unix

Skills:

Program languages:	Java, C, Python, Matlab, coffeescript, JavaScript, JSP, SQL, PL-SQL script, HTML, C++, Macro Assembly, Scheme
Certificates:	Deep Learning, TensorFlow Developer, TensorFlow: Advanced Techniques (DeepLearning.AI), Image Processing for Engineering and Science, Computer Vision for Engineering and Science (MathWorks)
Operating systems:	Windows, Linux, VxWorks
Languages:	Hebrew, English, Russian