Eli Schwartz – CV

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Education

2016-2018 **M.Sc. Electrical Engineering, Tel Aviv University, Israel**

- Advisors – Dr. Raja Giryes and Prof. Alex Bronstein
- Thesis – **"Learning an End-to-End Image Processing Pipeline".** First to show a model that learns the full camera image processing pipeline in an end-to-end fashion.

2007-2011 **B.Sc. Electrical Engineering, Technion - Israel institute of technology**

- Specialized in - Signal and Image Processing, Computer Engineering, Biological signals and Systems
- Final project - Detection of manipulations ("photoshopping") in images
  - The project won the Thomas Schwartz Award for outstanding projects in image processing and computer vision

Employment

2017-Present **Computer Vision Research – IBM Research AI**

- Conducting and publishing research on deep-learning based object recognition and detection

2015-2017 **Co-founder & CTO – Inka Robotics**

- A startup developing a vision-based autonomous tattooing robot
- Led the technical team developing algorithms, software & micro-controllers
- Turn it from idea to a working prototype (that tattooed my leg)

2013-2016 **Computer Vision Algorithm Engineer – Microsoft**

- Worked on the HoloLens Project (augmented reality smart glasses)
- Part of an incubation team – fast development of PoC for innovative technologies
- Developed computer vision algorithms for 3D cameras and Gaze tracking
- Developed algorithms in Matlab & performance critical implementations in C++

2011-2013 **ASIC Engineer – Qualcomm**

- Formal verification technical lead
- Functional verification

2008-2011 **ASIC Engineering Intern – IBM**

- ASIC formal and functional verification

2002-2005 **Military Service** - Combat military service in the Armored Corps, IDF

Teaching

2018 TA (Projects supervision) - Deep Learning on Computation Accelerators (CS@Technion)

2017 Supervising undergrad students final project (EE@Tel-Aviv University)

Languages

Hebrew – Mother tongue, English – fluent

Programing languages and environments

TensorFlow/Pytorch/Theano, OpenCV, Python, Matlab, C++, C, Windows, Linux

Publications and Patents

Published papers

L. Karlinsky*, J. Shtok*, S. Harary*, E. Schwartz*, M. Marder, S. Pankanti, R. Feris, A. Kumar, R. Giryes and A. Bronstein, “RepMet: Representative-based metric learning for classification and one-shot object detection”, CVPR 2019 pdf

E. Schwartz*, L. Karlinsky*, J. Shtok, S. Harary, M. Marder, R. Feris, A. Kumar, R. Giryes and A. Bronstein, “Delta-encoder: an effective sample synthesis method for few-shot object recognition”, NIPS 2018 (Spotlight) pdf

E. Schwartz, R. Giryes and A. M. Bronstein, “DeepISP: Learning End-to-End Image Processing Pipeline”, IEEE Transactions on Image Processing 2018 pdf

Submitted and Arxiv papers

N. Diamant, D. Zadok, C. Baskin, E. Schwartz and A. M. Bronstein, “Beholder-GAN: Generation and Beautification of Facial Images with Conditioning on Their Beauty Level”, 2019 pdf

C. Baskin, N. Liss, Y. Chai, E. Zheltonozhskii, E. Schwartz, R. Giryes, A. Mendelson and A. M. Bronstein, “NICE: Noise Injection and Clamping Estimation for Neural Network Quantization”, 2018 pdf

C. Baskin*, E. Schwartz*, E. Zheltonozhskii, N. Liss, R. Giryes, A. M. Bronstein and A. Mendelson, “UNIQ: Uniform Noise Injection for the Quantization of Neural Networks”, 2018 pdf

Patents

L. Karlinsky, E. Schwartz, J. Shtok, M. Marder and S. Harary, “Representative-Based Metric Learning for Classification and Few-Shot Object Detection.” US patent application No. 16/240,927.

C. Baskin, E. Schwartz, E. Zheltonozhskii, N. Liss, R. Giryes, A. M. Bronstein and A. Mendelson, “System and method for emulating quantization noise for a neural network.” US provisional patent application No. 62/661,016.

E. Schwartz, R. Giryes and A. M. Bronstein, “Method and system for end-to-end image processing.” U.S. Patent Application No. 16/251,123.

E. Shalev, S. Katz, and E. Schwartz. "Imaging devices and methods for authenticating a user." U.S. Patent Application No. 14/995,025.