

Summary

Independent and enthusiastic programmer and fresh BSc graduate with about 2 years of experience working with senior algorithm developers and academical researchers. My interests are a combination of software engineering and algorithm developement in any AI and Data related fields. Particularly, I like to design and implement the data collection (considering code efficiency, embedded RT programming) as much as to process the data, find the best algorithm and improve it to achieve project goals, using classic methods of Computer Vision with Machine Learning and Deep learning methods. Also I like to implement parallel computations using multithreading, distributed computing and GPU programming in CUDA.

Experience

Research Assistant - 11/2021 – 04/2023

Visual Sensing Theory & Applications Laboratory, Technion R&D, Haifa

- Implemented from scratch a multi-sensory vision system of a vehicle for detection & tracking obstacles according to research plan, using Machine Learning & Deep Learning. Resulted in a report of the study:
<https://github.com/ilyak93/ISAMV/blob/main/report.pdf>
- Implemented a navigation algorithm for a DJI Tello drone and a data recording module using the drone camera and Motive OptiTrack tracking system using a Deep Neural Network Visual Odometry Model and OptiTrack tracking system. Results are expected to appear in a future publication and ML conference.
<https://github.com/ilyak93/Tello-Drone-Control>
- Performed literature review, data recordings, experiments and outcome analysis.
- Worked with PhD, MSc staff and lab engineers to achieve research goals.

References: Lab Engineer: Matan Jacoby 0528962542

Industrial Project Developer - 03/2021 – 07/2021

Given Imaging, Medtronic, Haifa

- Implemented an advanced method (CVPR 2018) for training a deep neural network with "attention maps", aiming at achieving classification improvement as well as localization and explainability on Medtronic Endoscopy data.
- Reproduced algorithm paper results on original data (VOC) & adapted the method to Medtronic Endoscopy data.
- Resulted in 5% improvement in classification on ROC measurement and in 350% localization.
<https://ilyak93.github.io/Medtronic-Project/>
- Worked as part of a team of senior algorithm / machine learning engineers.

References: Senior Algorithm Engineers: Itamar Talmi 0545458828, Alexandra Gilinsky 0507722630

Skills

- Python, C/C++, Matlab, CUDA,
- PyTorch, Tesnorboard
- Sklearn, Numpy, OpenCV, Pandas, Pillow, Numba
- Windows, Linux, Docker, Git / Github
- OOP, Parallel & Distributed programming
- WebDev & Data-Bases & Distributed systems:
- Strong coding skills
- Problem solver
- Team player
- Independent and self-learner
- Curiosity-driven and self-motivated
- Java, JavaScript, React, HTML, CSS, Flask, SQL, REST, gRPC, ZooKeeper

Military Service & Honors

Commandeer – 12/2011 – 10/2014

Officer Preparation Course, Adjutant Corps, Human Resources Directorate, IDF

- Awarded for Excellence during Service by the base commander.

Participant of Youth Summer University for Outstanding Pupils from the Periphery, Tel-Aviv University - 2009

- Mark of excellency during studies with Average Grade: 97

Academical Courses and Projects

Deep Learning on Computation Accelerators	Project: Using non-deterministic automata for pattern recognition in NASDAQ data.
Digital Image Processing	Project: Using an LSTM Network to read hebrew hand-written text
Introduction to Machine Learning	Project: Clustering an ECG heartbeat dataset with DNN.
Introduction to Natural Language Processing	Project: Adding Attention to SinGAN and additionally using it to create animation with LSTM networks.
Signal, Image, and Data Processing	
Introduction to Artificial Intelligence	Project: TravelNet – Web development project (React & Flusk).