Contact

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Top Skills

Motion Tracking
Matlab
Signal Processing

Tamir Gez

Co-Founder & CSO at Motivision
Beer Sheva, South District, Israel

Summary

MSc in Electrical and Computer Engineering, experience in tracking algorithms, computer vision and AI across various sensors, Passionate about mathematics, computer vision, deep learning, AI and sensors

Experience

Motivision
Co-Founder & CSO
May 2020 - Present (3 years)

Co-Founder of Motivision, a start-up in the field of fitness, I have been responsible for developing an algorithm that identifies trainees, measures the correctness of their movements, and warns of movements that could cause injury or use of inappropriate weight. Our system uses computer vision tools, three-dimensional tracking and learning algorithms to perform the analysis in free space in gyms, enabling unrestricted movement for exercisers. My responsibilities have included:

- Developing the algorithm that identifies trainees, measures the correctness of their movements, and warns of movements that could cause injury or use of inappropriate weight.
- Using computer vision tools, three-dimensional tracking and learning algorithms to perform the analysis in free space in gyms.
- Ensuring unrestricted movement for exercisers by performing the analysis in free space.
- Identifying and developing partnerships with gyms, fitness centers, and other related organizations to promote and distribute our product.

Through my work at Motivision, I have been able to develop a unique and innovative product that uses advanced technology to improve the safety and effectiveness of fitness training. I have also gained experience in business development and partnership building, which has been instrumental in promoting and distributing our product.

Juganu

Computer Vision, ISP, and AI algorithms engineer

September 2020 - February 2023 (2 years 6 months)

Or Yehuda, Tel Aviv, Israel

As a Computer Vision, ISP, and AI algorithms engineer at Juganu, I have been responsible for developing edge systems that require developing products under the constraints of limited hardware. My responsibilities have included:

• Developing the tracking algorithm that uses the Kalman algorithm to predict the movement of the target. I was responsible for the development process from the phase of defining the problem, mathematical formulation, writing in the code, and implementation in the field.

• Developing a pruning pipeline for the deep networks to make them suitable to work in the edge units.

• Integrating all hardware systems with our various networks using ClearML in order to save engineer time on correctness checks, waiting between learning runs, and resource management.

• Writing an infrastructure for scanning parameters for the system under an experimental setting to find the ideal parameters for the product at the customer

• Writing tools for performing intrinsic and extrinsic calibration for the optical sensors, as well as building a robot using optical feedback for mechanical calibration of camera lenses.}

• Defining indicators for choosing an optical system, as well as implementing tools for simulating the layout of cameras according to drawings of the space and marking the areas the sensors see, and which analytics can be used in each area.

• Writing tools for changing perspective, casting between different coordinate systems, and casting to the bird view system.

Through my work at Juganu, I have been able to develop innovative products that use advanced technology to improve edge systems. I have gained experience in working with limited hardware, developing tracking algorithms and stabilizing the characteristic vector, developing ClearML systems, and integrating systems with hardware. My experience with this company was challenging, but I was able to overcome it with my knowledge and experience in the field.

Samsung Israel R&D Center - SIRC

Computer Vision and ISP algorithms engineer

February 2019 - March 2020 (1 year 2 months)

Tel Aviv Area, Israel

The team worked on writing algorithms for a dynamic vision camera sensor (events). The team mainly focused on developing a POC for the sensor. My responsibilities were:

• Writing an eye tracking algorithm, from the POC stage to an algorithm that runs in the wild, due to the features of the sensor that do not transmit much information and have a high frame rate (1000 FPS) is mainly used to detect ellipses using the RANSAC algorithm to support real time.

• Development of tools and infrastructure that support for the other development teams. The API was developed in C++ with a real-time optimization using OOP.

• Camera calibration between DVS and CMOS with intrinsic and extrinsic process to build a common projection plane for using in sensor fusion algorithms.

IDF - Israel Defense Forces

3 years 6 months

Computer Vision and data researcher at IAI on behalf of the military

April 2017 - December 2018 (1 year 9 months)

Israel

the product was in the field of event detections based on thermal sensor with regular CMOS cameras. My responsibilities were:

• database analysis - Defining the data, extracting metrics using data annotation, feature extraction, computer vision and image processing algorithms, video temporal information analysis and more.

• Creation of a decision system based on mathematical tools and learning algorithms to decide whether an event is a real event or false in the system, and classify alerts based on the parameters I defined.

Radar hardware team leader, Army

July 2015 - July 2017 (2 years 1 month)

Israel

– I commanded a hardware team, my responsibilities were:

• The training of the soldiers from the studies project to their entry into duty and launching the project for military use, as well as the management of their ongoing development in the unit, the team worked with FPGA controllers to build systems that deal with radars.

• Working with the aerospace industry in the field of radar - knowing different types of radars, and how they operate, how radar algorithms work,

transmission and receiver channels design and performing hardware fault analysis in the field.

Ben-Gurion University of the Negev
Research assistant at the Brain Research Laboratory
December 2014 - July 2015 (8 months)
Be'er Sheva Area, Israel

– the research solves the reverse problem of estimate electrical sources in the brain based on scalp measurements and wave dispersion models, based on CT and EEG scans, my responsibilities were:
• I wrote in MATLAB and Sim4Life a simulation that simulated the propagation of the waves by dividing the space into meshs and solving the numerical Maxwell equation given a source.

Ben-Gurion University of the Negev
Research assistant in the Acoustics Laboratory
November 2013 - February 2014 (4 months)
Be'er Sheva Area, Israel

As part of a program for exposing outstanding students to research, I participated in a research in the field of acoustics, when the study mapped rooms using an omni-acoustic speaker and omni-acoustic microphone, my responsibilities were:
• Exploring the propagation of the acoustic waves in the space between the omni-acoustic speaker and omni-acoustic microphone.
• Analyzed Bessel functions for dispersion to build a 3D map of the speaker-microphone space.

Education

Ben-Gurion University of the Negev
Master Engineer's degree, Electrical and Electronics Engineering · (October 2020 - August 2021)

Ben-Gurion University of the Negev
Engineer's degree, Electrical, Electronic and Communications Engineering Technology/Technician · (2011 - 2015)