ANTON MITROKHIN

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Google Scholar: (link)

Education

Ph.D, Computer Science 09/2016 - 08/2020
University of Maryland, College Park
Perception and Robotics Group, Advisor: Prof. Yiannis Aloimonos
Thesis: “Motion Segmentation and Egomotion Estimation with Event-Based Cameras”

B.E., Electrical and Computer Engineering 09/2012 - 07/2016
Moscow Institute of Physics and Technology
Institute of Microelectronics and Advanced Control Systems
Internship (co-op) at Intel, Advisor: Dmitry Babokin

Interests

perception for robotics, offline computer vision, automated ground truth generation, 3D reconstruction, egomotion estimation, calibration, sensors, autonomous vehicles

Relevant skills

Programming languages: C/C++ (STL, Boost, C++11, 14), Python, Bash
Tools: Git, SVN, OpenCL, OpenCV, GTSAM, PCL, ROS, TensorFlow, PyTorch
my Github page is available here

Employment

NVIDIA 09/2020 - present
FTE, Senior Software Engineer, Team lead for offline perception in the AV Ground Truth team

University of Maryland, College Park 09/2016 - 08/2020
Research Assistant: Perception and Robotics Group (website) 01/2017 - 08/2020
Teaching Assistant: CMSC 132:
Advanced object oriented programming 09/2016 – 01/2017
Teaching Assistant: CMSC 498F (website):
An introduction to the design and programming of robotics systems 01/2017 – 05/2017
Teaching Assistant: ENPM 673:
Perception for autonomous robots 01/2018 – 05/2018, 01/2019 – 05/2019

NVIDIA 06/2018 – 08/2018, 06/2019 – 08/2019
Research Intern: Autonomous Driving / Obstacle Perception Team (Sangmin Oh, Tilman Wekel)

Intel Corporation 07/2014 – 07/2016
Research Intern (co-op): Technology Pathfinding and Innovation (Dmitry Babokin)

Patents

US 18305153 - **"Generating Maps Representing Dynamic Objects for Autonomous Systems and Applications"**, 2023/04/21

US 18305185 - **"Automatic Propagation of Labels Between Sensor Representations for Autonomous Systems and Applications"**, 2023/04/21

US 17187350 - **"Ground Truth Annotation Pipeline for DNN Perception in Autonomous Machine Applications"**, 2021/02/26

Selected Publications

A. Sen, G. Pan, A. Mitrokhin, A. Islam. ***"SceneCalib: Automatic Targetless Calibration of Cameras and Lidars in Autonomous Driving"*** - ICRA 2023 (IEEE: https://ieeexplore.ieee.org/document/10161316). preprint

A. Mitrokhin, Z. Hua, C. Fermüller, Y. Aloimonos. ***"Learning Visual Motion Segmentation Using Event Surfaces"*** - CVPR 2020 (IEEE: https://ieeexplore.ieee.org/document/9157202/). *video*

A. Mitrokhin, P. Sutor, C. Fermüller, Y. Aloimonos. ***"Learning sensorimotor control with neuromorphic sensors: Toward hyperdimensional active perception"*** - Science Robotics 4 (30) (Science page: https://robotics.sciencemag.org/content/4/30/eaaw6736). *preprint*

A. Mitrokhin, C. Ye, C. Fermüller, J. A. Yorke, and Y. Aloimonos. ***"Unsupervised Learning of Dense Optical Flow and Depth from Sparse Event Data"*** - iROS 2020 (IEEE: https://ieeexplore.ieee.org/document/9341224). *Project page, video*

A. Mitrokhin, C. Ye, C. Fermüller, Y. Aloimonos, T. Delbruck. ***"EV-IMO: Motion Segmentation Dataset and Learning Pipeline for Event Cameras"*** - iROS 2019 (IEEE: https://ieeexplore.ieee.org/document/8968520/). *Project page, video, dataset*

A. Mitrokhin, C. Fermuller, C. Parameshwara, and Y. Aloimonos. ***"Event-based Moving Object Detection and Tracking"*** - iROS 2018 (IEEE: https://ieeexplore.ieee.org/document/8593805). *Project page, video*

Professional Activities

Reviewer

Conference on Computer Vision and Pattern Recognition (CVPR)
International Conference on Intelligent Robots and Systems (IROS)
International Conference on Robotics and Automation (ICRA)

Computer Vision and Image Understanding (CVIU)
IEEE Transactions on Signal Processing