

Iaroslav Melekhov

Research scientist

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Skills

computer vision image-based localization, optical flow, depth estimation, object detection, semantic segmentation, relative camera pose, 3-D reconstruction, multi-view geometry.
Python, C/C++, Lua, numpy, matplotlib, pandas, scipy, Matlab.
DL PyTorch, Caffe, Torch, OpenCV, scikit-learn.

Experience

Jan. 2020–present **Computer vision researcher at Aalto University, Espoo, Finland.**
Jul. 2019–Nov.2019 **Research intern (Computer Vision) at Niantic Labs, London, UK**, Working on a CNN-based feature detector and descriptor which is robust to different weather/illumination conditions and large view-point angles.
Oct. 2018–Apr.2019 **Researcher intern (Computer Vision) at Wayve.ai, Cambridge, UK**, Proposed a self-supervised approach for video-scene understanding with the focus on autonomous vehicles.
Nov.2017–Apr.2018 **Visiting researcher at ETH Zürich**, Proposed a CNNs-based method for geometric image correspondences and image alignment.
Jan.2015–Jan.2016 **Researcher at CMV group, University of Oulu**, Implementing an algorithm for patch matching problem; Conducting research related to image retrieval using Caffe library.
Apr.2014–Dec.2014 **Software Developer, PROTEI R&D center, St. Petersburg, Russia**, Redesigned a traffic management platform with deep packet inspection (DPI) capabilities; Implemented leaky (token) bucket algorithms to control peak and average data rate.
Sep.2009–Apr.2014 **Software Developer, Soft-Alliance, St. Petersburg, Russia**, Implemented an aircraft trajectory prediction module based on dynamic characteristics of the aircraft and environment conditions for Air traffic control systems.

Education

2016–2020 **PhD in Computer vision, Aalto University, Finland.**
2008–2010 **M.Sc in Radio Engineering, St.Petersburg Electrotechnical University "LETI", Russia, GPA 3.96/4.0.**
2004–2008 **B.Sc in Radio Engineering, St.Petersburg Electrotechnical University "LETI", Russia, GPA 3.91/4.0.**

Selected Publications

Geometric Image Correspondence Verification by Dense Pixel Matching, WACV 2020.

Z. Laskar*, [I. Melekhov*](#), H. Tavakoli, J. Ylioinas, J. Kannala; *equal contribution

TC-Net: Self-Supervised Monocular Video Scene Understanding Using Temporally Consistent Geometric Prior, ICMLW 2019.

[I. Melekhov](#), E. Rahtu, J. Kannala, A. Kendall

DGC-Net: Dense Geometric Correspondence Network, WACV 2019, Best Honourable paper award.

[I. Melekhov](#), T. Sattler, A. Tiulpin, M. Pollefeys, E. Rahtu, J. Kannala

Relative Camera Pose Estimation using Convolutional Neural Networks, ACIVS 2017, (oral).

[I. Melekhov](#), J. Ylioinas, J. Kannala, E. Rahtu

Awards and Scholarships

2018 Google Landmark Recognition Challenge (Kaggle) - Top 9% (out of 477 teams)
2017 TensorFlow Speech Recognition Challenge (Kaggle) - Top 9% (out of 1315 teams)
Dec.2018 Nokia Foundation scholarship
Jun.2016 Otto Malm scholarship

Hobbies

playing football, cooking, reading, participating in kaggle competitions