

Computer Vision for Intelligent Robotics

Posters Paper List

Low-level Vision and General Topics

[1] T. Karras, T. Aila, S. Laine and J. Lehtinen “**Progressive Growing of GANs for Improved Quality, Stability, and Variation**”, International Conference on Learning Representations (ICLR) 2018. <https://arxiv.org/pdf/1710.10196.pdf>

[2] N. Sünderhauf and O. Brock and W. Scheirer and R. Hadsell and D. Fox and J. Leitner and B. Upcroft and P. Abbeel and W. Burgard and M. Milford and P. Corke,
“**The Limits and Potentials of Deep Learning for Robotics**”,
In ArXiv: 1804.06557v1,
Paper: <http://arxiv.org/pdf/1804.06557v1>

[3] Katherine A. Skinner ; Eduardo Iscar ; Matthew Johnson-Roberson
“**Automatic color correction for 3D reconstruction of underwater scenes**”
IEEE Int. Conf. on Robotics and Automation (ICRA), 2017
Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989601>

[4] B. Ham, M. Cho, C. Schmid, and J. Ponce.
“**Proposal flow: Semantic correspondences from object proposals**”.
T-PAMI, 2017.
<https://arxiv.org/pdf/1703.07144>

[5] J. Revaud, P. Weinzaepfel, Z. Harchaoui, and C. Schmid,
“**DeepMatching: Hierarchical deformable dense matching,**”
IJCV, pp. 1–24, 2015.
<https://link.springer.com/content/pdf/10.1007%2Fs11263-016-0908-3.pdf>

[6] T. Zhou, P. Krähenbühl, M. Aubry, Q. Huang, and A. A. Efros,
“**Learning dense correspondence via 3D-guided cycle consistency,**”
in CVPR, 2016.
https://www.cv-foundation.org/openaccess/content_cvpr_2016/app/S02-02.pdf

[7] C. Liu, J. Yuen, and A. Torralba,
“**SIFT flow: Dense correspondence across scenes and its applications,**”

TPAMI, vol. 33, no. 5, pp. 978–994, 2011.

<https://dspace.mit.edu/openaccess-disseminate/1721.1/61983>

[8] X. Qi, Q. Chen, J. Jia and V. Koltun

“Semi-parametric Image Synthesis”,

Computer Vision and Patterns Recognition (CVPR) 2018. <http://vladlen.info/papers/SIMS.pdf>

Vision Based Ego-Motion Estimation and 3D Reconstruction

[9] Phil Ammirato, Patrick Poirson, Eunbyung Park, Jana Kosecka, Alexander C. Berg

“A dataset for developing and benchmarking active vision”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989164>

[10] Chamara Saroj Weerasekera, Yasir Latif, Ravi Garg, Ian Reid

“Dense monocular reconstruction using surface normals”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989293>

[11] Khalid Yousif ; Yuichi Taguchi ; Srikumar Ramalingam

“MonoRGBD-SLAM: Simultaneous localization and mapping using both monocular and RGB-D cameras”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989521>

[12] Lucas Teixeira ; Margarita Chli

“Real-time local 3D reconstruction for aerial inspection using superpixel expansion”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989530>

[13] Antonio Agudo and Francesc Moreno-Noguer

“Robust Spatio-Temporal Clustering and Reconstruction of Multiple Deformable Bodies”

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2018

http://www.iri.upc.edu/people/aagudo/Papers/PAMI2018/aagudo_fmoroeno_tpami18b.pdf

[14] L.v. Stumberg and V. Usenko and D. Cremers,

“Direct Sparse Visual-Inertial Odometry using Dynamic Marginalization”

In arXiv: 1804.05625v1

Paper: <https://arxiv.org/pdf/1804.05625v1.pdf>

[15] Y. Li and G. Wang and X. Ji and Y. Xiang and D. Fox,
“DeepIM: Deep Iterative Matching for 6D Pose Estimation”

In arXiv: 1804.00175v2

Paper: <https://arxiv.org/pdf/1804.00175v2.pdf>

[16] S. Garg and N. Suenderhauf and M. Milford,
“LoST? Appearance-Invariant Place Recognition for Opposite Viewpoints using Visual Semantics”

In arXiv: 1804.05526v2,

Paper: <http://arxiv.org/pdf/1804.05526v2>

[17] M. Hosseinzadeh and Y. Latif and T. Pham and N. Suenderhauf and I. Reid,
“Towards Semantic SLAM: Points, Planes and Objects”

In arXiv:1804.09111v1

Paper: <http://arxiv.org/pdf/1804.09111v1>

[18] Paul Bergmann, Rui Wang, Daniel Cremers

“Online Photometric Calibration for Auto Exposure Video for Realtime Visual Odometry and SLAM”

In IEEE Int. Conf. on Robotics and Automation (ICRA), 2018

Paper: <https://arxiv.org/pdf/1710.02081.pdf>

Visual Servoing & Perception-Aware Control

[19] Davide Falanga, Philipp Foehn, Peng Lu, and Davide Scaramuzza

“PAMPC: Perception-Aware Model Predictive Control for Quadrotors”,

Arxiv, 2018. <https://arxiv.org/pdf/1804.04811.pdf>

[20] Z. Zhang and D. Scaramuzza

“Perception-Aware Receding Horizon Navigation for MAVs”, International Conference on Robotics and Automation (ICRA) 2018. http://rpg.ifi.uzh.ch/docs/ICRA18_Zhang.pdf

[21] M. Valls, HFC Hendrikx, V. Reijgwart, F. Meier, I. Sa, R. Dubè, A. Gawel, M. Burki and R. Siegwart **“Design of an Autonomous Racecar: Perception, State Estimation and System Integration”**, International Conference on Robotics and Automation (ICRA) 2018.

Semantic Scene Segmentation

[22] John McCormac ; Ankur Handa ; Andrew Davison ; Stefan Leutenegger

“SemanticFusion: Dense 3D semantic mapping with convolutional neural networks”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989538>

[23] Q. Wang, X. Zhou, .K Daniilidis

“Multi-Image Semantic Matching by Mining Consistent Features.”

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018

<https://arxiv.org/pdf/1711.07641>

[24] L. Shao and P. Shah and V. Dwaracherla and J. Bohg

“Motion-based Object Segmentation based on Dense RGB-D Scene Flow”

In arXiv: 1804.05195v1

Paper: <https://arxiv.org/pdf/1804.05195v1.pdf>

[25] Philipp Jund, Andreas Eitel, Nichola Abdo, Wolfram Burgard

“Optimization Beyond the Convolution: Generalizing Spatial Relations with End-to-End Metric Learning”

In IEEE Int. Conf. on Robotics and Automation (ICRA), 2018

Paper: <https://arxiv.org/pdf/1707.00893.pdf>

[26] L. Size, B. Wild and T. Landgraf

“RenderGAN: Generating Realistic Labeled Data”, International Conference on Learning Representations (ICLR) 2017. <https://arxiv.org/pdf/1611.01331.pdf>

[27] MV. Giuffrida, H. Scharr and SA. Tsafaris **“ARIGAN: Synthetic Arabidopsis Plants using Generative Adversarial Network”**,

In Arxiv 2017. <https://arxiv.org/pdf/1709.00938.pdf>

[28] SR. Richter, V. Vineet, S. Roth and V. Koltun

“Playing for Data: Ground Truth from Computer Games”

European Conference on Computer Vision (ECCV) 2016.

Paper: <https://arxiv.org/pdf/1608.02192.pdf>

Object Detection, Classification and Localization

[29] Paul Wohlhart and Vincent Lepetit

“Learning Descriptors for Object Recognition and 3D Pose Estimation”

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015

Paper:

https://www.cv-foundation.org/openaccess/content_cvpr_2015/papers/Wohlhart_Learning_Descriptors_for_2015_CVPR_paper.pdf

[30] Marius Fehr ; Fadri Furrer ; Ivan Dryanovski ; Jürgen Sturm ; Igor Gilitschenski ; Roland Siegwart ; Cesar Cadena

“TSDF-based change detection for consistent long-term dense reconstruction and dynamic object discovery”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989614>

[31] J. Krishna Murthy ; G. V. Sai Krishna ; Falak Chhaya ; K. Madhava Krishna

“Reconstructing vehicles from a single image: Shape priors for road scene understanding”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989089>

[32] Sedat Dogru ; Lino Marques

“Shape reconstruction using a mobile robot for demining and UXO classification”

IEEE Int. Conf. on Robotics and Automation (ICRA), 2017

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7989665>

[33] Sergey Zakharov ; Wadim Kehl ; Benjamin Planche ; Andreas Hutter ; Slobodan Ilic

“3D object instance recognition and pose estimation using triplet loss with dynamic margin”

Intelligent Robots and Systems (IROS), 2017 IEEE/RSJ International Conference on

Paper: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8202207>

[34] M. Rünz and L. Agapito,

“MaskFusion: Real-Time Recognition, Tracking and Reconstruction of Multiple Moving Objects”

In arXiv:1804.09194v1

Paper: <https://arxiv.org/pdf/1804.09194v1.pdf>

[35] Pat Marion, Peter R. Florence, Lucas Manuelli, Russ Tedrake

“LabelFusion: A Pipeline for Generating Ground Truth Labels for Real RGBD Data of Cluttered Scenes”

In IEEE Int. Conf. on Robotics and Automation (ICRA), 2018

Paper: <https://arxiv.org/pdf/1707.04796.pdf>