

# DONGDONG YU

ByteDance AI Lab

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## EDUCATION

Doctor of Philosophy in Pattern Recognition and Intelligent Systems, **Institute of Automation, Chinese Academy of Sciences**, Supervised by Prof. Jie Tian and Prof. Ruwei Dai 2012-2017

Bachelor of Engineering in Pattern Recognition and Intelligent Systems, **Xi'an Jiao Tong University** 2008-2012

## WORK EXPERIENCE

**ByteDance AI Lab** April 2018 - Now

- Research on Human Parsing, Video Segmentation, and Multi-person Pose Estimation.

**SAIT: Samsung Advanced Institute of Technology** July 2017 - March 2018

- Research on Human Parsing and Multi-person Pose Estimation.

## AWARDS

- Our team (ByteDance-SEU) obtained the **1st place** of Single-Person Human Pose Estimation Track in the Visual Understanding of Humans in Crowd Scene and the 3rd Look Into Person (LIP) Challenge.(CVPR 2019)
- Our team (ByteDance-SEU) obtained the **2nd place** of Single-Person Human Parsing Track in the Visual Understanding of Humans in Crowd Scene and the 3rd Look Into Person (LIP) Challenge.(CVPR 2019)
- Our team (ByteDance-SEU) obtained the **5th place** of COCO Keypoint Detection in the COCO + Mapillary Joint Challenge.(ECCV 2018)
- Our team (Miracle) obtained the **5th place** of Multi-Person Pose Estimation in the PoseTrack Challenge.(ECCV 2018)
- Our team (Miracle) obtained the **3rd place** of Multi-Person Pose Tracking in the PoseTrack Challenge.(ECCV 2018)
- Our team (ByteDance-SEU) obtained the **2nd place** of Single-Person Human Pose Estimation Track in the Visual Understanding of Humans in Crowd Scene and the 2nd Look Into Person (LIP) Challenge.(CVPR 2018)
- Our team (TeamVia) obtained the **8th place** of Semi-Supervised Video Segmentation in the DAVIS Challenge on Video Object Segmentation.(CVPR 2018)

## PROJECTS

**Multi-person Pose Estimation** SAIT and ByteDance AI Lab, 2017.07 - Now

- Propose a Context-and-Spatial Aware Network for Multi-Person Pose Estimation.
- Propose Multi-Person Pose Estimation with Enhanced Channel-wise and Spatial Information.

Both Methods have achieve state-of-the-art performance on COCO keypoint benchmark.

**Video Inpainting/Image Inpainting** ByteDance AI Lab, 2019.05 - Now

- Segment the unwanted object through all video frames by using the semi-unsupervised video object segmentation method.
- Inpaint the segmentaion-region with optic-flow guidance.
- Inpaint the unseen region with image inpainting algorithm.

## Video Segmentation

ByteDance AI Lab, 2018.04 - Now

- Implement a classic video segmentation method (OSVOS).
- Stretch the DeepLabv3+ (image Segmentation) to video segmentation with the mask propagation method.
- Implement Mask-RCNN to refine the segmentation performance.

## Human Pose Re-targeting

ByteDance AI Lab, 2018.10 - Now

- Extract the body keypoint (25 keypoints), hand keypoints (2\*21 keypoints), face keypoints (60 keypoints) for each person.
- Use a Pix2PixHD framework to learn the model from person pose to person image.
- Add the FaceGAN and FlowNet into the framework, to refine the facial expression and smooth spatio-temporal.

## Human Parsing

SAIT, 2017.07 - 2018.04

- Implement the DeepLabv3+ and PSPNet to parse the human.
- Implement the SyncBN in the network.

## CONFERENCES

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- Kai Su<sup>†</sup>, **Dongdong Yu<sup>†</sup>**, Zhenqi Xu, Xin Geng, Changhu Wang. Multi-Person Pose Estimation with Enhanced Channel-wise and Spatial Information. ***CVPR, 2019***.
- **Dongdong Yu<sup>†</sup>**, Kai Su<sup>†</sup>, Jia Sun, Changhu Wang. Multi-person Pose Estimation for Pose Tracking with Enhanced Cascaded Pyramid Network. ***ECCVW, 2018***.
- Jia Sun<sup>†</sup>, **Dongdong Yu<sup>†</sup>**, Yinghong Li, Changhu Wang. Mask Propagation Network for Video Object Segmentation. ***CVPRW, 2018***.
- **Dongdong Yu**, Mu Zhou, Feng Yang, Di Dong, Olivier Gevaert, Zaiyi Liu, Jingyun Shi, Jie Tian. Convolutional Neural Networks for Predicting Molecular Profiles of Non-small Cell Lung Cancer. ***ISBI, 2017***.
- **Dongdong Yu**, Yali Zang, Di Dong, Mu Zhou, Olivier Gevaert, Mengjie Fang, Jingyun Shi, Jie Tian. Developing a Radiomics Framework for Classifying Non-small Cell Lung Carcinoma Subtypes. ***SPIEMI, 2017***.
- Xiaonan Wan, **Dongdong Yu**, Feng Yang, Caiyun Yang, Chengcai Leng, Min Xu, Jie Tian. A New Region Descriptor for Multi-modal Medical Image Registration and Region Detection. ***EMBC, 2015***.

## JOURNALS

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- Min Xu, Mengjie Fang, Jian Zou, Shudong Yang, **Dongdong Yu**, Lianzhen Zhong, Chaoen Hu, Yali Zang, Di Dong, Jie Tian, Xiangming Fang. Using Biparametric MRI Radiomics Signature to Differentiate between Benign and Malignant Prostate Lesions. ***European Journal of Radiology, 2019***.
- Shuo Wang<sup>†</sup>, Jingyun Shi<sup>†</sup>, Zhaoxiang Ye<sup>†</sup>, Di Dong<sup>†</sup>, **Dongdong Yu<sup>†</sup>**, Mu Zhou, Ying Liu, Olivier Gevaert, Kun Wang, Yongbei Zhu, Hongyu Zhou, Zhenyu Liu, Jie Tian. Predicting EGFR Mutation Status in Lung Adenocarcinoma on CT Image Using Deep Learning. ***European Respiratory Journal, 2019***.
- Wei Shen, Mu Zhou, Feng Yang, **Dongdong Yu**, Di Dong, Caiyun Yang, Yali Zang, Jie Tian. Multi-crop Convolutional Neural Networks for Lung Nodule Malignancy Suspiciousness Classification. ***Pattern Recognition, Volume 61, Pages 663-673, 2017***.
- **Dongdong Yu**, Feng Yang, Caiyun Yang, Chengcai Leng, Jian Cao, Yining Wang, Jie Tian. Fast Rotation-Free Feature-Based Image Registration Using Improved N-SIFT and GMM-Based Parallel Optimization. ***IEEE Transactions on Biomedical Engineering, Volume 63, Pages 1653-1664, 2016***.
- Xinzhong Zhu, Di Dong, Zhendong Chen, Mengjie Fang, Liwen Zhang, Jiangdian Song, **Dongdong Yu**, Yali Zang, Zhenyu Liu, Jingyun Shi, Jie Tian. Radiomic Signature as a Diagnostic Factor for Histologic Subtype Classification of Non-small Cell Lung Cancer. ***European Radiology, Volume 28, Issue 7, Pages 2772-2778, 2018***.

- Zhenchao Tang, Zhenyu Liu, Ruili Li, Xin Yang, Xingwei Cui, Shuo Wang, **Dongdong Yu**, Hongjun Li, Enqing Dong, Jie Tian. Identifying the White Matter Impairments among ART-naïve HIV Patients: a Multivariate Pattern Analysis of DTI Data. *European Radiology, Volume 27, Issue 10, Pages 4153-4162, 2016.*
- Chengcai Leng, Guorong Cai, **Dongdong Yu**, Zongyue Wang. Adaptive Total-Variation for Non-Negative Matrix Factorization on Manifold. *Pattern Recognition Letters, Volume 98, Pages 68-74, 2017.*
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