

# YULE LI

yuzhile\_study@163.com <https://yule-li.github.io>

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## EDUCATION

### **National University of Defense Technology (985 Project), changsha, china**

Master of Computer Vision and Machine Learning, Sep. 2014 - Jul. 2017

- Topic: Person detection in indoor scene based on deep learning
- Advisor: Prof. Yong Dou

### **Beihang University (985 Project), beijing, china**

Bachelor of Science in Computer Science, Sep. 2010 - Jul. 2014

Weighted Average Score:84.15/100 Rank:37/217

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## RESEARCH EXPERIENCE

### **Institute of Computing Technology, Chinese Academy of Sciences**

Jul.2017-Present

Algorithm Engineer in Visual Information Processing and Learning group headed by Shiguang Shan

- Involved in the project of face-to-unlock application, which includes the face recognition, live detection and network compression. I'm responsible for the module of cross-modality face recognition, which is the problem of face matching between visual images and near infrared images. I designed a network to match the requirements of model size and runtime. I also proposed a new loss function suitable for this problem to achieve a significant improvement in the validation dataset. The project is being actively promoted.
- Responsible for the training of face recognition network for massive identities. The training set includes up to one million identities and one hundred million images. I have trained the network successfully based on triplet loss and improve the accuracy with a larger margin on the evaluation set of multiple real-world scenarios. The success of training comes down to the following factors: 1) an implementation trick to make triplet loss to view about 4000 images in a single batch; 2) a good sample strategy consistent with the dataset; 3) a series of methods to speed up the training from 100 fps to 400 fps in single machine with 4 gpus. My trained model has been applied to several products and I was rewarded for the performance.

### **SenseTime**

Mar.2017-Jun.2017

Intern in the segmentation group mentored by Jianping Shi

- Video semantic segmentation.

### **Chinese University of Hong Kong**

Sep.2016-Feb.2017

Junior Research Assistant in Multimedia Laboratory mentored by Dahua Lin

- Video-based semantic segmentation targeted to ensure low latency while maintaining high segmentation quality. I developed a framework for video semantic segmentation, which incorporates two novel components: (1) a feature propagation module that adaptively fuses features over time via spatially variant convolution, thus reducing the cost of per-frame computation; and (2) an adaptive scheduler that dynamically allocate computation based on accuracy prediction. On both Cityscapes and CamVid, the proposed framework obtained competitive performance compared to the state of the art, while substantially reducing the latency, from 360 ms to 119 ms.

### **National University of Defense Technology**

Sep.2016-Feb.2017

Graduate Student, Parallel and Distributed Processing Key Laboratory, supervised by Yong Dou

- People head detection in crowded scenes. I first use a region proposal network to predict the bounding boxes and corresponding scores of multiple instances in the region. A local head classifier network is then trained to score the bounding box generated from the region proposal model. After that, I propose an adaptive fusion method by optimally combining both the region and local scores to obtain the final score of each candidate bounding box. My algorithm achieve superior performance on the challenge data set, which improves recall from 81%(best at that time) to 88% and AP from 78.4%(best at that time) to 85.3%.
- Weakly supervised people detection based on video in indoor scenes. The foreground is extracted from video using the background extraction method. I proposed a method based on cluster to segment the foreground into person instances as auxiliary groundtruth label. Finally, I then use the method like RCNN to train the person detector. My proposed method achieve the accuracy above 80% on the four validation video covering different scenarios.

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## PUBLICATION

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- Low-Latency Video Semantic Segmentation (Yule Li, Jianping Shi, Dahua Lin, accepted by CVPR 2018 as spotlight)
- Localized Region Context and Object Feature Fusion for People Head Detection (Yule Li, Yong Dou, Xinwang Liu, Teng Li, published in ICIP 2016)

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## HONORS&AWARDS

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- National Endeavor Fellowship(9 out of 217 students in School of Computer Science and Engineering, Beihang University) (2011)
- National Endeavor Fellowship(9 out of 217 students in School of Computer Science and Engineering, Beihang University) (2012)
- Second prize of Blue Bridge Cup Beijing Division C language group (2014)
- Outstanding graduates of Beihang University (2014)

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## PROFESSIONAL SKILLS

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- Good at c/c++, familiar with Python, familiar with Java, MATLAB, PHP
- Good at Tensorflow and Caffe
- Familiar with Linux system, familiar with shell script
- CET-6