ZHENLI ZHANG

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EDUCATION

Fudan University, Shanghai, China *2014.9 - Present*
Bachelor of Science*(Anticipated)*, Department of Computer Science and Technology
Cumulative GPA: **3.51/4.00**, Major GPA: **3.79/4.00**
Ranking: **21/73** in School of Computer Science and Technology

University of California, Irvine, CA, USA *2016.9 - 2017.1*
Exchange student in UCEAP Program in Donald Bren School of Information and Computer Sciences
(50 students selected from Fudan University, 2 from School of Computer Science and Technology)
Cumulative GPA: **4.00/4.00**, Major GPA: **4.00/4.00**
Topped in classes related to my research interest like Digital Image Processing and Computer Graphics.

RESEARCH EXPERIENCE

Fudan University, Shanghai, China *2016.7 - 2016.8*
Shanghai Key Laboratory of Intelligent Information Processing *Advisor:* **Prof. Xiangyang Xue**

· **Project: Detection of Cars and Persons in Low-Resolution Video and Small-Size Pictures**
· Refined and fine-tuned the overall architecture of Faster-rcnn to adjust it to our project
· Combined the Vibe for localization and the Cifar-10 CNN for classification on video input
· Wrote a domestic labelling system using Python
· Exploited the characteristics of video to further enhance the model's performance and got a mAP of 85%

University of California, Irvine, CA, USA *2016.10 - 2017.1*
Computational Vision Group of UC Irvine *Advisor:* **Prof. Charless Fowlkes**

· **Project: Instance Segmentation and Tracking of Worms in Biological Experiments**
· Modified the scanner and wrote a script to automate scanning
· Created a baseline using multi-stage cascading networks commbining traditional grouping methods

TuSimple Inc., Beijing, China *2017.2 - 2017.5*
Team of Visual Computing Algorithms *Advisor:* **Dr. Naiyan Wang**

· **Project: Camera Abnormal Condition Detection**
· Trained a 2-classes classification network using small patches of picture drawn from videos of a contaminated camera, trying to predict a heatmap of the contaminated area following the trend of FCN
· Resort to segmentation eventually due to the great variation of contaminated area and its inherent local feature characteristic
· Combined with traditional blur detection method to further enhance performance

Megvii Inc. (Face++), Beijing, China *2017.7 - 2018.3*
Research Basemodel *Advisor:* **Dr. Xiangyu Zhang**

· Discovered the nonparallel fact of different basemodel's performance on classification and later transfered task such as detection or segmentation
· Identified the ineffective feature fusion problem in currently prevalent "U-shaped" network structure and suggest a new perspective to boost the performance of different computer vision tasks which currently employ the "U-shaped" neural network structure

- Proposed several methods on basemodel to alleviate the feature fusion problem on latter decoder stages
- Proposed several methods to bridge the gap between high level and low level features of different stages in "U-shaped" network structure to tackle the feature fusion problem for semantic segmentation
- Achieved 87.9% mIoU on PASCAL VOC 2012 benchmark, which is the state-of-the-art and a paper is accepted by ECCV 2018
- Applied techniques above to human seg project and boost performance by a large margin

Johns Hopkins University, Baltimore, MD, USA *2018.7 - Present*
CCVL Research Group *Advisor:* **Prof. Alan Yuille**

- Observed the limited competence and irrational prior of current per-pixel cross-entropy loss function in semantic segmentation
- Propose to model a learnable loss function using a neural network and iteratively refine the segmap in semantic segmentation
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PUBLICATION

Zhenli Zhang, Xiangyu Zhang, Chao Peng, Xiangyang Xue and Jian Sun
"ExFuse: Enhancing Feature Fusion for Semantic Segmentation"
In Proc. of European Conference on Computer Vision (ECCV), 2018 [arxiv], [CVF], [leaderboard]

AWARDS

2014 Fudan University Second-class Freshman Scholarship
2015 Tung OOCL First-class Scholarship (Top 3%)
2015 Excellent Student of Fudan University (Top 2%)
2016 Excellent League Member of Fudan University (Top 2%)
2016 Top Ten Students of School of Computer Science and Technology

SKILLS AND OTHERS

Computer Python, C/C++, LaTeX
Language Chinese (native), English (fluent)
TOEFL 107/120, Reading 28, Listening 29, Speaking 22, Writing 28
GRE Verbal 154/170, Quantitative 168/170, Analytical Writing 3.5/6.0