Jiachen LI

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EDUCATION

Shanghai Jiao Tong University (SJTU) Sep 2015 - Present

B.S. in Electronic Science and Technology

Overall GPA: 3.71/4.00 Major GPA: 3.76/4.00

Core Courses: Signals and Systems (93/100), Physics (98/100), Electromagnetic Field (93/100), Engineering Practice (95/100), Embedded Systems, Thinking and Approach of Programming, Data Structure and Algorithm, Machine Learning

RESEARCH EXPERIENCES

Lung Nodule Analysis Based on Deep Learning SJTU Feb 2017 - Jun 2017

Advisor: Yu Qiao, Associate Professor, Institute of Image Processing & Pattern Recognition, Shanghai Jiao Tong University

- Preprocess the training dataset by making masks of lungs and segmenting lungs out of CT images
- Design segmentation net based on U-net architecture and design a classify net based on 3D convolution
- Train the segmentation and classify nets simultaneously and the recall reach 98% on training dataset

Weakly Supervised Semantic Scene Parsing UIUC Jun 2018 – Aug 2018

Advisor: Thomas Huang, Professor, Image Formation & Processing Group, University of Illinois Urbana-Champaign

- Train some fully-supervised baselines to compare with a point-based distance metric learning method
- The final method achieved 3/4 the performance of fully-supervised method with only 0.006% annotated label pixels
- One paper accepted by AAAI Conference on Artificial Intelligence (**AAAI**) 2019

2D Object Detection with False Positive Reduction UIUC Jun 2018 – Nov 2018

Advisor: Thomas Huang, Professor, Image Formation & Processing Group, University of Illinois Urbana-Champaign

- Propose an E-FPS model and use a multi-scale training strategy with false positive reduction to improve accuracy
- Car, pedestrian and cyclist detection results ranked 7th, 1st and 1st respectively on the KITTI 2D object detection benchmark
- Submit one paper to Conference on Computer Vision and Pattern Recognition (**CVPR**) 2019

Improving Object Detection with Density-Based NMS UIUC&IBM Sep 2018 – Present

Advisor: Honghui Shi, Assistant Professor & IBM researcher, University of Illinois Urbana-Champaign & IBM

- Train several detection baselines on Pascal VOC, KITTI and MSCOCO dataset
- Propose a density-based NMS to replace traditional NMS to post-process the detection results and get better performances

Implement and Optimize Object Detection Algorithm on FPGA SJTU Nov 2018 – Present

Advisor: Li Chen, Associate Professor, Institute of Image Communication and Network Engineering, Shanghai Jiao Tong University

- Implement BNN classification network and TVM/VTA framework on PYNQ Z1 board
- Aiming to implement some state-of-the-art object detection algorithm on PYNQ Z1 board

PUBLICATIONS

[1] Rui Qian, Yunchao Wei*, Honghui Shi*, **Jiachen Li**, and Thomas Huang. "Weakly Supervised Scene Parsing with Point-based Distance Metric Learning". In: *AAAI Conference on Artificial Intelligence (**AAAI**), 2019.*

[2] **Jiachen Li**, Honghui Shi*, Yunchao Wei*, Rui Qian, Xu Zhao and Thomas Huang. "Efficient False Positive Suppression for Multi-Scale Object Detection" *(In Submission)*

SKILLS

English Fluency	TOEFL iBT 102 (Reading 28, Listening 29, Speaking 23, Writing 22)
Mathematics	GRE Quantitative Reasoning 170 (Top 2%)
Computer Skills	C/C++, Python, Matlab, LaTex, VHDL, Verilog, Labview, Assembly Language
Deep Learning Framework	Caffe, Tensorflow, Mxnet