Yihui He

Computer Science · 2nd year undergrad

Xi'an Jiaotong University, China

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self-motivated, hard working

Education

Xi'an Jiaotong University

Xi'an, China

Second year undergraduate in Computer Science, anticipated 2018 — *2014 - PRESENT*

- rank 20/180
- ralated courses: Data Structure, C/C#, pSTAT

University of California, Santa Barbara

CA, US

Exchange student in graduate school — *2016 Spring*

- GPA 4.0/4.0
- ralated courses: advanced computer vision, deep learning, advanced machine learning
- rank 1 twice in CIFAR10/100 image recognition projects

Experience

Megvii/Face++

Beijing

Deep Learning Research Intern — *2016.7-now*

- Do world-class Deep Learning research, supervised by Xiangyu Zhang and Jian Sun

DeepGlint, vision group

Beijing

Computer Vision Research Intern — *2016.6*

- Investigate deep learning algorithms for medical image segmentation

Baidu Xi'an Jiaotong University Joint Class

2016-2017

- A joint cultivate class towards AI

Undergraduate research, computer network and security lab

Researcher for security game — *2016 winter*

- submitted a paper to IEEE internet magzine,
  <Vehicle Traffic Driven Camera Placement for Better Metropolis Security Surveillance>, contact me if interested
  proposed algorithm, write code, do writing of experiment part

undergraduate research, computer vision and AI lab

Researcher — *2015 winter*

- write code for shuttlecock detection in badminton video
- write code for multi faces tracking

ROBOCON competation, robot team

Programmer — *freshman year*

- Build STM32 embeded system for robots
- write code for SDcard driver, ADC/DAC, encoder, motor

high school robot team

Lead programmer — *3 years*

- Win world championship in Robocup Junior 2014, Brazil
- competator in Robocup Junior Brazil 2014, Nederland 2013, Mexico 2012

Projects

Computer Vision

I'm enthusiastic about computer vision, my hands-on projects are as follow:

- Encoder-decoder network for medical image segmentation
  I modified u-net with ResNet, dice coeff loss, and atrous convolution.
- residual neural network with tensorflow on CIFAR100
  I reimplement 6/13/20 layers RNN in tensorflow from scratch, and test it's result on CIFAR10/100.
- understanding depth: neural network approach, with Kinect and ImageNet
  I pretrain a convolutional neural field on large scale depth dataset, and do transfer learning on ImageNet.
- analysis of 1 layer NN in unsupervised learning on CIFAR10
  Preprocess data using PCAwhitening and Kmeans, train MLP on CIFAR10, reach 78% accuracy. Then I compared differences with original paper.
- shuttlecock detection and tracking
  With guassian mixture model, I extract shuttlecock proposals. Then I use Partical filter to refine proposals. From multi view cameras, I employed structure from motion to predict its 3D location. Combined with Physics laws, landing location prediction accuracy is around 5 cm. (This system works on embeded linux with openCV)
- multi faces tracking
- panorama creator, from scratch
  First, to reorder shuffled images, I match SIFT features pairs between each couple of input images. Naive bayes is employed to determine order from multi proposals. Then cylindrical coordinate and RANSAC are used to estimate transformation. Finally, merge image using α blending.
- tracking with active contour and particle filter
- edge detection from scratch
- Haris corner detector from scratch
- graph segmentation from scratch
- eigen faces from scratch

other projects

I'm also interested in AI, machine learning, computer network, embeded system

- pacman with reinforcement learning
- probing mal urls caches of all DNS servers in China
- Decision tree from scratch
- suppliers information scrapper, (sold to a small consulting company)
- Stackleberg security game on vehicle traffic
- infared short distance telephone with ADC/DAC

Extracurricular

2015	**semi-final, 200/7000,** Microsoft beauty of programming. (a algorithm competition like ACM.)
2015	**30,000+ visits,** CSDN Blogger, I wrote technical blogs for Algorithms, Android, embeded systems, etc. Stop update for a long time.
now	**7,000+ upvotes,** zhihu writer, I answered questions from internet, programming, math to English learning.
2016	**TOEFL,** 100