

Huikai Wu

PHD STUDENT

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Summary

Deep Learning Researcher

GOOGLE SCHOLAR

I'm currently a PhD candidate at CASIA, affiliated with NLPR and supervised by Professor Kaiqi Huang. I work on image processing, computer vision and deep learning.

Research Experience

Palmwin Information Technology

RESEARCHER

Nanjing, China

Aug. 2015 - Oct. 2015

- Website: <http://www.chatgame.me/en/>
- Write a survey on SLAM and AR.

NLPR (National Laboratory of Pattern Recognition)

RESEARCHER

Beijing, China

Dec. 2014 - Apr. 2015

- Website: <http://www.nlpr.ia.ac.cn/nlpren/EN/volumn/home.shtml>
- Design and implement a car recognition system with 95% accuracy based on CNNs.

Education

CASIA (Institute of Automation, Chinese Academy of Sciences)

PHD IN COMPUTER VISION AND DEEP LEARNING

Beijing, China

Sep. 2015 - Present

Topic: Pixel-level vision understanding GPA: **3.67/4**

NJU (Nanjing University)

B.S. IN SOFTWARE ENGINEERING

Nanjing, China

Sep. 2011 - Jun. 2015

Thesis: Deep Active Learning GPA: **3.87/4** Rank: **5/257**

Research

Fast End-to-End Trainable Guided Filter

Nov. 2017

PROJECT WEBSITE (TO BE APPEARED IN CVPR 2018)

A universal CNN module for constructing faster, lighter and better dense prediction networks.

A2-RL: Aesthetics Aware Reinforcement Learning for Image Cropping

Sep. 2017

PROJECT WEBSITE (TO BE APPEARED IN CVPR 2018)

An algorithm for image auto-cropping with deep reinforcement learning.

GP-GAN: Towards Realistic High-Resolution Image Blending

Mar. 2017

PROJECT WEBSITE

An algorithm for image blending with GANs.

CNN-CUT: A Weakly Supervised Way for Image Segmentation

Jun. 2016

COURSE PROJECT

An algorithm for saliency object segmentation by combining a pretrained network on ImageNet and Grab Cut.

Deep Active Learning

May. 2015

B.S. THESIS PAPER

Train a CNN with comparable accuracy using less than 10% examples selected by active learning.

Highlighted Research Experience

Fast End-to-End Trainable Guided Filter

PROJECT WEBSITE (TO BE APPEARED IN CVPR 2018)

We present a deep learning block for joint upsampling, which aims at generating high-resolution output. With the proposed block, we achieve the state-of-the-art performance and run 10-100 times faster. The proposed block can be widely deployed in dense prediction tasks ranging from image processing to computer vision. The technique report is published in CVPR 2018.

A2-RL: Aesthetics Aware Reinforcement Learning for Image Cropping

PROJECT WEBSITE (TO BE APPEARED IN CVPR 2018)

We formulate image cropping task as a sequential decision-making process and propose an algorithm based on deep reinforcement learning. The proposed algorithm achieves the state-of-the-art performance with much fewer candidate windows and much less time. The technique report is published in CVPR 2018.

GP-GAN: Towards Realistic High-Resolution Image Blending

PROJECT WEBSITE

We propose GP-GAN for image blending task, which is a framework combining the strengths of gradient-based image editing and GANs. The proposed approach can deliver high-resolution, realistic images with fewer bleedings and unpleasant artifacts.

Honors & Awards

INTERNATIONAL

2017 **4th Place**, StarCraft Competition in AIIDE 2017, beat Facebook's team.

DOMESTIC

2016 **1st Place**, CCF Big Data Competition: Movie Box Prediction.

Project

Face Swap

PROJECT WEBSITE

Swap face between two photos with Python 3, OpenCV and dlib.

Jan. 2018

MSC: A Dataset for Macro-Management in StarCraft II

PROJECT WEBSITE

A dataset for macro-management in StarCraft II based on PySC2.

Sep. 2017

Chainer implementation of Pix2Pix

PROJECT WEBSITE

Chainer implementation of *Image-to-Image Translation Using Conditional Adversarial Networks*

Mar. 2017

Chainer version of neural-style and fast-neural-style

PROJECT WEBSITE

Chainer implementation of *A Neural Algorithm of Artistic Style* and *Perceptual Losses for Real-Time Style Transfer and Super-Resolution*

Mar. 2017

Chainer implementation of realismCNN

PROJECT WEBSITE

Chainer implementation of realismCNN proposed in *Learning a Discriminative Model for the Perception of Realism in Composite Images*

Mar. 2017

References

Prof. Kaiqi Huang

Homepage

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Prof. Junge Zhang

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