Huikai Wu

PHD Student

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Education

CASIA (Institute of Automation, Chinese Academy of Sciences) *Beijing, China*

PHD in Computer Vision and Deep Learning *Sep. 2015 - Present*

- GPA: **3.67**/4

NJU (Nanjing University) *Nanjing, China*

B.S. in Software Engineering *Sep. 2011 - Jun. 2015*

- GPA: **3.87**/4 Rank: **5**/257

Research

FastFCN: Rethinking Dilated Convolution in the Backbone for Semantic Segmentation *Mar. 2019*

Project Website

A novel framework for faster, lighter and better semantic segmentation with the proposed Joint Pyramid Upsampling (JPU).

SparseMask: Differentiable Connectivity Learning for Dense Image Prediction *Sep. 2018*

Project Website

Automatically design the network architecture for dense image prediction tasks, achieving better fusion of multi-scale feature maps.

Fast A3RL: Aesthetics-Aware Adversarial Reinforcement Learning for Image Cropping *Sep. 2018*

Paper (IEEE Transactions on Image Processing (Early Access))

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

Fast End-to-End Trainable Guided Filter *Nov. 2017*

Project Website (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 (CVPR 2018)

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

GP-GAN: Towards Realistic High-Resolution Image Blending *Mar. 2017*

Project Website (ACMMM 2019)

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 leaning.

Project

DeepJS *Apr. 2019*

Project Website

Online demos for my research on image processing and computer vision based on deep learning.

Face Swap *Jan. 2018*

Project Website

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

MSC: A Dataset for Macro-Management in StarCraft II *Sep. 2017*

Project Website

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

Chainer implementation of Pix2Pix *Mar. 2017*

Project Website

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

Chainer version of neural-style and fast-neural-style *Mar. 2017*

Project Website

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

Chainer implementation of realismCNN *Mar. 2017*

Project Website

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

RoboWaiter: A Robot for guest registering *Jan. 2014*

Right ID: 201410500366.5

A robot for guest registering by face recognition and speech recogintion.

Fast image inpainting application on Android *Jan. 2014*

Published

An Android application for image inpainting and object removal with 2x speed-up.

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.

Work Experience

Preferred Networks *Tokyo, Japan*

International Intern *July. 2018 - Oct. 2018*

- Website: `https://www.preferred-networks.jp/en/`
- Neural Architecture Search for Pixel-level Image Understanding

Palmwin Information Technology *Nanjing, China*

Researcher *Aug. 2015 - Oct. 2015*

- Website: `http://www.chatgame.me/en/`
- Write a survey about SLAM and AR.

NLPR (National Laboratory of Pattern Recognition) *Beijing, China*

Researcher *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.