

# 尤安升

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## 教育背景

北京大学 信息科学技术学院 智能科学系 硕士研究生 2017.09 ~ 2020.07  
● 研究方向: 视频语义分析、计算机视觉、深度学习、机器学习  
北京大学 信息科学技术学院 计算机系 本科生 2013.09 ~ 2017.07  
● 主修课程: 数据结构与算法、算法设计与分析、操作系统、计算机体系结构、软件工程

## 实习经历

腾讯微信 CV 图像搜索算法研究 2019.02~2019.08  
● 专注研究商品弱监督检测、商品聚类去噪、商品同款合并以及商品检索模型训练相关问题。改进弱监督检测算法, 调整聚类去噪算法, 设计自动化商品同款合并流程, 统一商品检测模型训练框架;  
● 基于 PyTorch 框架进行算法研发, 相关成果应用在微信小程序图片搜索上, 取得较大的进展。

深动科技 CV 场景解析相关算法研究 2017.09~2018.06  
● 专注研究关键点、分割相关问题, 主要是人体、路标以及灯杆关键点, 自动驾驶场景分割。其中路标关键点定位使用 Top-Down 定位策略并利用 RANSAC 算法重构具体位置便于高精度地图绘制; 灯杆关键点使用 Bottom-Up 定位策略, 复现 OpenPose 并在其上进行修改, 给关键点加上方向信息防止误连; 尝试了一些高效分割算法进行场景解析。  
● 基于 PyTorch 框架进行算法研发, 在相关任务上均取得较好效果, 并成功部署应用;  
● 指导老师: 杨奎元、李志伟。(正式员工待遇)

水滴科技 CV 人脸识别算法研究 2016.11~2017.04  
● 专注研究人脸识别算法, 主要通过 GANs 解决低分辨率、光照等相关问题, 同时参与到人脸识别整个系统的开发, 包括人脸检测、人脸对齐和人脸识别。  
● 基于 Caffe、Python 进行相关实验和开发, 在内部人脸评测集上取得较好准确率和召回率, 并因此获得 3000 元奖金。

## 科研经历

基于 PyTorch 的 CV 框架 TorchCV 2017.10~2019.05  
基于 PyTorch 设计并实现 CV 问题解决框架, 支持图像分类、图像语义分割、目标检测、关键点定位、对抗生成网络相关计算机视觉任务, 其中大部分可以达到论文效果。如 Faster R-CNN、SSD、YOLOv3、PSPNet、DeepLabv3、DenseASPP、OpenPose、Pix2Pix、CycleGAN 等。(唯一作者)  
公开 GitHub 链接 (600+stars): <https://github.com/youansheng/torchcv>  
子项目 GitHub 链接 (100+stars): <https://github.com/youansheng/torchcv-seg>

360° 图片目标检测 Reprojection R-CNN 2018.10~2019.03  
针对 360° 图片提出了一个快速且准确的两阶段目标检测算法 Reprojection R-CNN; 我们 Reprojection R-CNN 中同时利用了等距柱状投影图的全方位视野以及透视投影图的规律采样; 我们将传统目标检测中的术语迁移到球面上, 并基于此提出了两个新的 360° 数据集。  
Reprojection R-CNN: A Fast and Accurate Object Detector for 360° Images, 共同一作, ICCV2019 在投。  
私有 GitHub 链接: <https://github.com/youansheng/Reprojection-R-CNN>

Cityscapes 街景分割 GALD-Net 2018.09~2019.02  
提出了一种全新的建模上下文的模块, 通过考虑局部特征适应性地将图片中的全局信息分散到局部用于生成

更好的特征,然后为了防止全局信息过分影响局部特征表示。最终在 cityscapes 数据集上取得了第二名的成绩,超过 Nvidia 以及 Tencent AI LAB。

Global Aggregation then Local Distribution for Scene Understanding, **第二作者**, IJCAI2019 在投。

公开 GitHub 链接: <https://github.com/lxtGH/GALD-Net>

## 专业技能

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- 精通 C/C++、Python、Shell 编程语言,精通数据结构与算法;
- 精通深度学习相关计算机视觉算法,熟练使用深度学习框架,如 PyTorch、TensorFlow 等;
- 熟悉 Java、C#、HTML+CSS 编程语言,以及软件工程相关理论。

# Donny You

Master student in Key Laboratory of Machine Perception, Peking University  
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## Education

**Peking University      Artificial Intelligence      Master      2017.09 ~ 2020.07**

- Research Areas: Computer Vision, Deep Learning, Machine Learning.

**Peking University      Computer Science      Bachelor      2013.09 ~ 2017.07**

- Majors: Data Structures and Algorithms, Design and Analysis of Algorithms, Operating System, Computer Architecture, Software Engineering.

## Internship

**Tencent      CV      Image Retrieval      2019.02~2019.08**

- Research in algorithms about Weakly Object Detection, Image Clustering, Class Merging and Image Retrieval. Proposed a new pipeline for weakly object detection, developed automatic class merging and denoising tools and maintained all tasks into an efficient project.
- Developed by PyTorch, achieved better results in all tasks and successfully deployed on Mini Program Searching of WeChat APP.

**DeepMotion      CV      Pose Estimation/Scene Parsing      2017.09~2018.06**

- Research in algorithms about Pose Estimation, Semantic Segmentation and Object Detection. Adopted Top-Down pose method for roadmark detection with RANSAC for reconstructing, adopted Bottom-Up pose method for Pole Detection with directional Pose Representation and tried lots of efficient segmentation networks for Scene Parsing.
- Developed by PyTorch, achieved better results in all tasks and successfully deployed.
- Advised by Kuiyuan Yang and Zhiwei Li. (Paid as full-time employee)

**Watrix Technology      CV      Face Recognition      2016.11~2017.04**

- Research in algorithms about Face Recognition. used GANs to tackle the difficulties of low-resolution and illumination and participated in the development of the whole pipeline for face recognition system, including Face Detection, Face Alignment and Face Recognition.
- Developed by Caffe and Python, achieved better results on evaluation set and won an award for this contribution with ¥3000.

## Research

**TorchCV: PyTorch-Based Computer Vision Framework      2017.10~2019.05**

I have maintained a flexible pytorch-based framework for deep learning in computer vision. It supports the training, testing, and deployment for most of computer vision tasks, such as Image Classification, Semantic Segmentation, Object Detection, Pose Estimation and Generative Adversarial Networks (GANs) and achieves comparable performance in public datasets including Faster R-CNN, FPN, SSD, YOLOv3, PSPNet, DeepLabv3, DenseASPP, OpenPose, Pix2Pix, CycleGAN. **(only author)**

Public GitHub Link (600+stars): <https://github.com/youansheng/torchcv>

Sub-project GitHub Link (100+stars): <https://github.com/youansheng/torchcv-seg>

**Reprojection R-CNN: 360° Image Object Detection      2018.10~2019.03**

We introduce a fast and accurate two-stage method for 360° object detection named Reprojection R-CNN, which takes advantage of both omnidirectional equirectangular projection and distortion-free perspective projection. We

adapt the terminologies of conventional object detection task to 360° images, and create two novel 360° datasets.

Reprojection R-CNN: A Fast and Accurate Object Detector for 360° Images (**co-first author**), ICCV2019 in submission.

Private GitHub Link: <https://github.com/youansheng/Reprojection-R-CNN>

### **GALD-Net: Cityscapes Scene Parsing**

**2018.09~2019.02**

We propose Global Aggregation then Local Distribution (GALD) scheme to distribute global information to each position adaptively according to the local information around the position, which could effectively alleviate the dominance of the global context. And we win the second place in cityscapes with mIoU 83.3.

Global Aggregation then Local Distribution for Scene Understanding (**second author**), IJCAI2019 in submission.

Public GitHub Link: <https://github.com/lxtGH/GALD-Net>

### ***Skills***

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- Skilled at C/C++/Python/Shell programming, Data structures and Algorithms;
- Skilled at PyTorch/TensorFlow/MXNet, Deep Learning, Machine Learning and Computer Vision;
- Familiar with Java/C#/HTML+CSS programming, theory of Software Engineering.