Xiao Chen

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🎓 Education

Shanghai Jiao Tong University, Shanghai, China   2016 – Present
Master student in Pattern Recognition, expected March 2019. GPA: 3.9 / 4.0

Shanghai Jiao Tong University, Shanghai, China   2012 – 2016
B.S. in Automation. Ranking: 5 / 78

👥 Experience

Tencent Inc. Shanghai, China   Jun. 2018 – Present
Summer Intern   Research and Development, SNG

Video Audit Algorithms.

1. Implement risky image detection algorithm to identify the risk type and risk score of the key frames extracted from video.
2. Implement violent video detection algorithm with CNN+convLSTM architecture.

Hikvision Inc. Hangzhou, China   Mar. 2018 – Jun. 2018
Intern   Computer Vision Algorithm Engineer, Research Institute

Inference Optimization of Human Pose Estimation.

- Customize CPU layers and CUDA layers of Caffe.
- Without precision reduction, the inference speed on GPU achieves 4 times increase and the inference speed on CPU achieves 33% increase.
- With 2% precision reduction, the inference speed on GPU achieves 8-9 times increase.

Multi-person Pose Estimation   May. 2017 – Present
Machine Learning, Computer Vision, Pose Estimation   Individual Project

Present a generic bottom-up approach for multi-person pose estimation.

- Introduce a representation of body joint pairs association via limb detection heatmaps. Our approach extends the single-person pose estimator to a promising multi-person pose estimator with negligible increase in parameter size.
- Tailor focal loss for human pose estimation by binarizing the ground truth heatmaps to convert the pixel-wise regression task to a pixel-wise classification task and address the data imbalance in pose estimation.
- *Publication:* **Xiao Chen**, Genke Yang. Multi-Person Pose Estimation with Limb Detection Heatmaps. IEEE International Conference on Image Processing(ICIP), 2018.

⚙ Skills

- Programming Languages: Python, C++
- Library: Pytorch, Caffe, Tensorflow

♡ Honors and Awards

2nd *Prize* of China Graduate Mathematical Contest In Modeling	2017
Meritorious Winner of the Mathematical Contest in Modeling	2015
National Scholarship	2015

ℹ Miscellaneous

- GitHub: https://github.com/simochen
- Languages: English - Fluent, Mandarin - Native speaker

陈 晓

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❖ 教育背景

2016.9 2019.3　　上海交通大学 电子信息与电气工程学院 自动化系 硕士
　　　　　　　　　　绩点：**3.9 / 4.0**

2012.9 2016.6　　上海交通大学 电子信息与电气工程学院 自动化系 本科
　　　　　　　　　　学积分：**89.30**　　　　　　专业排名：**5/78**

❖ 实习经历

2018.6 - 至今　　腾讯 SNG内容平台部 应用研究

1. 视频风险识别：搭建图像风险识别算法，根据从视频中抽取的图像关键帧，识别风险类型和风险值，并将模型接入线上服务。
2. 视频暴力行为检测：输出视频暴力行为检测方法调研报告，搭建基于 CNN+convLSTM 的暴力行为检测算法。

2018.3 - 2018.6　　海康威视研究院 计算机视觉算法工程师

1. 人体姿态估计算法推断过程的算法效率优化：自定义caffe的cpu和cuda层，优化算法推断过程。在不损失精确度的条件下，GPU上推断速率提升4倍，CPU上推断速率提升33%；在精确度降低2%的条件下，GPU上推断速率提升8~9倍。
2. 基于视频的姿态估计与跟踪：调研SOTA方法和算法实现。

❖ 项目经历

2017.5 - 至今　　二维图像多人姿态估计

结合深度卷积网络以及组合优化算法，实现二维图像中多人的关键点识别和姿态估计。

- 在单人姿态估计网络中增加通道训练表征关键点相关性的肢干热度图。该方法可与任意单人姿态估计网络相结合，在仅增加少量参数与计算量的情况下，使单人姿态估计网络具有多人姿态估计能力。
- 通过二值化将姿态估计中的逐像素点回归任务转换为逐像素点分类，并应用Focal Loss训练网络，避免训练中的数据不平衡问题。
- **论文发表：** Xiao Chen, Genke Yang. Multi-Person Pose Estimation with Limb Detection Heatmaps. IEEE International Conference on Image Processing(ICIP), 2018.

❖ 奖学金及竞赛荣誉

2017　　光华奖学金，第十四届全国研究生数学建模竞赛二等奖
2015　　国家奖学金，Meritorious Winner of the Mathematical Contest in Modeling
2014　　全国大学生数学建模竞赛本科组二等奖

❖ 专业能力

掌握计算机视觉、机器学习和深度学习基本算法，C++、Python 等编程语言，Caffe、Torch7、PyTorch、TensorFlow、Matlab 等科学计算框架。

❖ 语言能力

大学英语六级(CET6)：559