GENGWEI ZHANG

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EDUCATION

Sun Yat-Sen University *Sept. 2015 - Present*
Senior Undergraduate Overall GPA: 4.0/5.0
School of Data and Computer Science

ACADEMIC EXPERIENCE

Human Parsing April 2018 - Present
Advisor: Dr. Zhuo Su *Research Assitant*

- Proposed a network architecture with attention mechanism and pixel shuffle based on Densenet for human parsing task.
- Carried out experiments to explore the advantages and disadvantages of traditional Encoder-Decoder architecture, and conducted different fusion strategies to improve it.
- Re-implemented Deeplab-v3+ and Pspnet networks with PyTorch for comparison experiments.
- Published a multi-person human parsing dataset.

Multi-Person Pose Estimation Nov. 2017 - Present
Advisor: Dr. Zhuo Su *Research Assitant*

- Carried out experiments to excavate the connection and difference between single and multi-person pose estimation.
- Analyzed MS-COCO dataset and tried different data augmentation strategy.
- Fully re-implemented state-of-the-art algorithm CPN with PyTorch and make it public.
- Transferred detection algorithm FPN to human pose estimation task using TensorFlow.
- Participated in challenges associated with pose estimation (FashionAI and AI challenger etc.).

Visual Tracking Summer 2017
Advisor: Dr. Zhuo Su *Research Assitant*

- Studied several traditional visual tracking algorithms: CSK, KCF
- Researched and carried out experiments on deep-learning based visual tracking algorithms: SiameseFC, CFnet, ECO etc.
- Presented review achievements in group seminar.

WORK EXPERIENCE

Tencent Inc. Summer 2018
Supervisor: Zuck Chen *Research and Development Intern*

- Compared Image Super Resolution algorithms (IDN, VDSR etc) based on speed, performance and implementation cost, then selected DCSCN algorithm to deploy.
- Modified and trained algorithm to suit for mobile devices using TensorFlow.
- Deployed algorithm with TensorFlow Lite, TensorFlow Mobile, and accelerate with mobile GPU using Qualcomm SNPE on mobile devices.
- Integrated algorithm into a mobile video app.

PUBLICATIONS

Xianghui Luo, Zhuo Su, Jiaming Guo, **Gengwei Zhang**, Xiangjian He. "Trusted Guidance Pyramid Network for Human Parsing." In 2018 ACM Multimedia Conference on Multimedia Conference (ACM Multimedia) (pp. 654-662). ACM. (**Poster**)

Jiaming Guo, Zhuo Su, Xianghui Luo, **Gengwei Zhang**, Xiwen Liang "Conditional Feature Coupling Network for Multi-Persons Clothing Parsing." Pacific Rim Conference on Multimedia (PCM), 2018, September (pp. 189-200). Springer, Cham. (**Oral**)

PROJECTS

PyTorch-cpn

· An implementation of CVPR 2018 paper *Cascaded Pyramid Network for Multi-Person Pose Estimation*
· 120+ stars on GitHub: `https://github.com/GengDavid/pytorch-cpn`

AI-Fundation

· Implemented traditional machine learning algorithms from scratch with python and c++.
· Elaborated principles for each algorithm implemented (all in English).
· Link: `https://github.com/GengDavid/AI-Fundation`

LEADERSHIP AND OTHER EXPERIENCE

FashionAI Global Challenge
Team Leader *March - May, 2018*

· Selected and optimized Hourglass and CPN algorithm with PyTorch.
· Used model fusion and test set augmentation strategy to get better performance.
· Key Points Detection of Apparel Challenge, final rank(2^{nd} round): 53/2322

Other competetions

· Honorable Mentions in 2017 COMAP's Mathematical Contest in Modeling.
· First Prize in 2017 Sun Yat-sen University software innovation competition.

TECHNICAL STRENGTHS

Computer Languages	C/C++, Python, MATLAB, Cython, Java, HTML/CSS/Javascript
Deep learning Platforms	PyTorch, Tensorflow, Caffe/Caffe2
Tools & Os	WordPress, LaTeX, Linux (Ubuntu, CentOS, Kali)