Shen Zhuoran

cmsflash99@gmail.com | +852 6563 6140, +86 139 9988 0290 | cmsflash.github.io | github.com/cmsflash

Education

The University of Hong Kong, *Hong Kong*   *Sep. 2015 - Present*
Bachelor of Engineering in *Computer Science*; CGPA: 3.97/4.30; standing: 1/111; major CGPA: 4.13/4.30.
University of California, Davis, *CA, United States*   *Sep. 2017 - Dec. 2017*
Bachelor's Reciprocity Student in *Computer Science*; GPA: 4.00/4.00.

Work Experience

SenseTime, *Hong Kong*   *Jun. 2017 - Present*
Research Intern, Perception of Objects Team, SenseTime Research
- Developed a research project template that facilitated a team of ~40 to transition from Caffe to PyTorch.
- Conducted academic research projects listed in *Research Experience*.

Research Experience

Visual Embedding of Chinese, Final-Year Project   *Sep. 2018 - Present*
Supervised by Dr. Kenneth K. Y. Wong, Associate Professor, Computer Vision Group, The University of Hong Kong
- Designing a novel model to improve Chinese embedding accuracy by utilizing visual features.
- Developed a PyTorch embedding library. Reduced single-GPU training time from 82 days to 28.1 hours compared to the best existing open-source implementation.

Factorized Attention, Research Experience in Industry   *Sep. 2018 - Nov. 2018*
Supervised by Dr. Yi Shuai, Vice Director of Research, SenseTime Research
- Proposed *factorized attention*, which reduced the memory and computational complexities of self-attention from quadratic to linear and is applicable to computer vision, NLP, and speech analysis.
- Achieved new states-of-the-art on object detection (43.1 over 41.8 in AP on MS-COCO 2017) and stereo depth estimation (0.477 over 1.09 in EPE on Scene Flow) and significant improvement on instance segmentation (37.9 over 36.6 in AP on MS-COCO 2017).
- Submitted a first-author paper to CVPR 2019.

Project on Stereo Depth Estimation, Research Experience in Industry   *May 2018 - Aug. 2018*
Supervised by Dr. Yi Shuai, Vice Director of Research, SenseTime Research
- Developed a stereo depth estimator based on PSMNet with improved training procedures.
- Achieved 2x reduction in error rate (EPE) over the previous state-of-the-art on the Scene Flow dataset.

Projects

BeautyNet, Personal Project   *May 2018 - Present*
- Developed a PyTorch project template. Applied deduplication, modularization, and a consistent code style to improve maintainability, testability, and analyzability.
- Became 2nd most popular PyTorch template on GitHub, got 180+ stars, and trended for 3 days.

Awards

- **First Runner-up**, *ACM-HK Programming Contest 2017*
- **Second Runner-up**, *ACM-ICPC Hong Kong PolyU International Invitational 2017*
- **Dean's Honours Lists, 2015-2018**, *Faculty of Engineering, The University of Hong Kong*
- **Dean's Honor List, Fall Quarter 2017**, *College of Letters and Science, University of California, Davis*
- **YC Cheng Engineering Scholarship, 2017**, *Faculty of Engineering, The University of Hong Kong*

Preprint

- **Shen Z.**, Zhang M., Yi S., Yan J., Zhao H. (2018). *Factorized Attention: Self-Attention with Linear Complexities*. In submission to CVPR 2019.

Skills

- **Programming**: Python, C, C++, Java, Shell script, Markdown, LaTeX
- **Technologies**: PyTorch, Caffe, Git, Slurm, Django, Jekyll, Vim, CUDA, NumPy, OpenCV
- **Languages**: Mandarin Chinese (native), English (116 in TOEFL)