Shen Zhuoran

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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, Intelligent Perception and Services Team, Smart City Group

- Developed a research project template that facilitated a team of ~40 to transition from Caffe to PyTorch.
- Conducted academic research projects partially listed in *Selected Research Experience*.

Selected Research Experience

Universal Neural Networks, Industry Research *Jan. 2019 - Present*
Supervised by Dr. Yi Shuai, Vice Director of Research, SenseTime
In collaboration with Speech Group, Machine Intelligence Laboratory, Cambridge University

- Designing a novel, universal network architecture for computer vision, natural language processing, and speech analysis with decomposed attention.

Human-Object Interaction with Attentive Feature Pyramid and pairNMS, Industry Research *Mar. 2019*
Supervised by Dr. Yi Shuai, Vice Director of Research, SenseTime

- Improved role AP of 42.8 to 50.3 on V-COCO and set a new state-of-the-art over the previous 48.7. Submitted a paper to ICCV 2019.

Decomposed Attention, Industry Research *Sep. 2018 - Nov. 2018*
Supervised by Dr. Yi Shuai, Vice Director of Research, SenseTime

- Proposed *decomposed 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) and image classification (93.7% over 93.0% in top-5 accuracy on ImageNet).

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 the 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. (2019). *Decomposed Attention: Self-Attention with Linear Complexities*. In submission to ICCV 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)