Yijie Li

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EDUCATION

Beijing-Dublin International College, Beijing University Of Technology (BJUT)   09/2019-07/2023

- Major: **Software Engineering** (**Full English Teaching**); Current GPA: **3.78/4.2**; IELTS: **6.5**
- **Computer Skills**: Python, C/C++, Java, Pytorch, OpenCV, CUDA

PUBLICATIONS

[1] Hewei Wang, **Yijie Li**, Shijia Xi, Shaofan Wang, Muhammad Salman Pathan, Soumyabrata DEV. *AMDCNet: An Attentional Multi-Directional Convolutional Network for Stereo Matching*, Displays, Accepted.

[2] Hewei Wang, Kaiwen Gong, Shijia Xi, **Yijie Li**, Ziyuan Wen, Zixiao Ma, Muhammad Salman Pathan, Soumyabrata DEV. *MFCSNet: Musician-Follower Complex Social Network for Measuring Musical Influence*, Entertainment Computing, Under Review.

[3] Hewei Wang, **Yijie Li**, Bolun Zhu, Kaiwen Gong, Ziyuan Wen, Shaofan Wang, Soumyabrata Dev. *SYGNet: A SVD-YOLO based GhostNet for Real-time Driving Scene Parsing*, 29th IEEE International Conference on Image Processing (ICIP 2022), Accepted.

[4] **Yijie Li**, Hewei Wang, Shaofan Wang, Yee Hui Lee, Muhammad Salman Pathan, Soumyabrata Dev. *UCloudNet: A Residual U-Net with Deep Supervision for Cloud Segmentation, IEEE Geoscience and Remote Sensing Letters*, Under Review.

[5] **Yijie Li**, Hewei Wang, Shaofan Wang, Soumyabrata Dev. *DAANet: Dual Attention Aggregating Network for Salient Object Detection*, Signal Processing: Image Communication, Under Review.

RESEARCH EXPERIENCES

RA of Prof. Yongjin Liu's Research Group, Tsinghua University   01/2022-Present

- Study Generative Adversarial Networks (GAN), Denoising Diffusion Probabilistic Models (DDPM), style transfer, and style-model based image manipulation.
- Currently focusing on StyleGAN-based image attribute manipulation.

RA of Prof. Soumyabrata DEV's Research Group, University College Dublin   01/2021-09/2021

Project 1: "AMDCNet: An Attentional Multi-Directional Convolutional Network for Stereo Matching"

- Contributed to proposing an attentional multi-directional convolutional network (AMDCNet) for circumventing some issues related to stereo matching.
- Tested the AMDCNet with standard images in the Middlebury test dataset, Scene Flow and KITTI 2015.
- Mainly responsible for evaluating the AMDCNet on the KITTI 2015 dataset and completing the comparative tests of Match Precision indexes.
- Concluded that the depth map output by AMDCNet has better depth estimation of details and higher accuracy compared with partial models of the same type.
- The code can be found in: https://github.com/WangHewei16/AMDCNet-for-Stereo-Matching

Project 2: "UCloudNet: A Residual U-Net with Deep Supervision for Cloud Segmentation"

- Proposed a model for ground-based cloud segmentation by conducting several experiments.
- Designed the structure of UCLoudNet, performed different training configurations on data sets, and analyzed the performance of proposed method.
- The opensource code can be found in: https://github.com/Att100/UCloudNet

Project 3: "SYGNet: A SVD-YOLO based GhostNet for Real-time Driving Scene Parsing"

- Participated in the experimental design, model training, and performance analysis; Evaluated the effect of GhostNet light-weight module of SYGNet.

Project 4: "DAANet: Dual Attention Aggregating Network for Salient Object Detection"

- Completed the research together with group members and finished a research paper as first author which has been submitted to Signal Processing: Image Communication.
- Designed the deep learning model and performed standard experiments with qualitative, quantitative evaluation, and ablation study on model structures.
- The opensource code can be found in: https://github.com/Att100/DAANet

PROJECT EXPERIENCES

Project 1: "A simple deep learning system with Numpy"

- Developed a simple deep learning system with dynamic computation graph, including basic auto-grad, optimizers (Adam, SGD, etc.), and network layers (Linear, ReLU, Softmax, BatchNorm1d, etc.).
- The opensource code can be found in: https://github.com/Att100/Simple-DeepLearning-System

Project 2: "PaddlePaddle reproduction of Denoising Diffusion Probabilistic Models (DDPM)"

- Reproduced the paper Denoising Diffusion Probabilistic Models with PaddlePaddle.
- Trained the original attention U-Net on CIFAR10 and a simplified FPN (remove attention module, replace concatenation with addition) on CelebA-HQ (128x128).
- Adopted DDIM on pre-trained DDPM to speed up the sample process.
- The opensource code can be found in: https://github.com/Att100/PaddlePaddle-DDPM

Project 3: "A CUDA extension for python"

- Implemented a CUDA extension for speeding up tensor operation in Python.
- The implemented functions currently support many basic operations, including array-slice, broadcast, exp, log, etc.