Internship Application - SiChuan University - Jingtong Yue

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Education:

Organization : Sichuan University
Degree : undergraduate(the third year)
Major : Communication Engineering(Outstanding Engineers' Class)/EE
GPA of all subjects : 3.88/4.0
Rank : 1/30
IELTS : 7.0

Satisfaction of basic requirements

1. I am a junior undergraduate student at Sichuan University studying EE majoring in B-level subject of communication engineering, and I have rich experience in computer vision research by doing scientific researches at the Image Institute of Sichuan University.

2. I have extensive experience in artificial intelligence research, with articles in submission in the field of computer vision and in progress in the field of radar and image multimodal fusion.

3. For the algorithmic innovation and research ability support, please see the Research Experience section. For mathematical reasoning skills, I had taken Calculus 1, Calculus 2 and Linear Algebra courses with scores of 96/100, 96/100, and 97/100.

4. I am fluent in C, C++ and python and proficient in the pytorch deep learning framework.

5. In addition to this, I have Android mobile app development skills and neural network mobile porting skills.

Research Experience:

11/2022-today Unlocking Low-Light-Rainy Image Restoration by Pairwise Degradation Feature Vector Guidance (Submitted, participate as a co-first author. **It is accomplished with Prof.Chao Ren and Chongyi Li (MMLab@NTU))**

Our main contributions in this work include：

1. We propose a parallel network for extracting degradation information of low light rain image.
2. We construct a low-light rain image dataset containing both synthetic and real images
3. We design a semi-supervised framework based on Degradation Representation Learning. It can train both synthetic and real images by contrast learning.

08/2023-today Radar camera fusion detection guided by degradation representation(under experiment)

To fulfill the safety requirements of autonomous driving, it is important to accurately detect obstacles at all scales, but almost all existing only image-based networks fall short in performance in the detection task of bad weather. Therefore, we propose a weather degradation representation-guided feature fusion detection (DRF) method for camera and millimeter-wave radar signals. Our main contributions in this work include:

1. We propose a degradation representations guided, feature fusion(DRF) method for deep fusion of radar and visual signals.
2. We construct a camera images paired with radar signals dataset which include different weather conditions and contains both synthetic and real images
3. We design a fusion detection framework based on YOLO, which is a plug-and-play model for the YOLO series and can perform target detection and instance segmentation tasks.

11/2023-12/2023 APP development, neural network mobile porting

In the competition I designed an Android mobile app for image restoration in a variety of situations, in which I ported a lightweight Super-Resolution network to mobile in an int8 quantization. In addition to this, the app also has functions such as object detection (YOLO), crack restoration, de-noising, etc., and has been tested to have good performance in real images.

Future Work:

I am passionate about computer vision and robotic and also planning to go abroad to pursue a master's degree in robotics in 2025.

Awards & Honors:

Second Prize of Electronic Science and Technology Innovation Competition2023/12

Second Prize in NUS Summer Research Deep Learning and Robotics Project Completion-2023/7

Second Class Scholarship of Sichuan University 2022

Sichuan University Third Class Scholarship 2023

Excellent Student of Sichuan University 2022, 2023

Provincial Project of Sichuan University Students' Innovation and Entrepreneurship Competition (Completed) 2023/10

Silver Prize of Sichuan University Internet Plus Innovation and Entrepreneurship Competition2023/6

Provincial First Prize of National College Students Mathematics Competition2022/5