Yucai Bai

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Education

Sichuan University (SCU) 2017 – Present

Master of Engineering Major in Software Engineering
Supervised under Prof. Yi-Fei Pu

Chongqing University of Posts and Telecommunications(CQUPT) 2013 – 2017

Bachelor of Engineering, received in 6/2017
Major in Software Engineering
GPA: 3.28 / 4.0

Publication

- **Yucai Bai**, Qiang Dai, Long Chen*, **Extreme Low Resolution Activity Recognition with Spatial-Temporal Attention Transfer**, recently submitted to the AAAI2020.
- **Yucai Bai** Lei Fan, Ziyu Pan, Long Chen*, **Monocular Outdoor Semantic Mapping with a Multi-task Network**, accepted by IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019).
- **Yucai Bai**, Sen Zhang, Miao Chen, Yi-Fei Pu*, Jiliu Zhou, **A Fractional Total Variational CNN Approach for SAR Image Despeckling**, Intelligent Computing Methodologies pp 431-442
- Miao Chen, Yi-Fei Pu, **Yu-Cai Bai**, **A Fractional-Order Variational Residual CNN for Low Dose CT Image Denoising**, Intelligent Computing Methodologies pp 238-249

Projects

Non-compliance Action Detection of Court Scene in Surveillance Videos March 2019 - Present

As the team leader, I designed and led the entire project, including **a detection algorithm of the count non-compliance actions in real-time** and **the production of corresponding datasets**. The detection is divided into two stages. Firstly, we use the **object detection** algorithm to detect people and crop the corresponding area. Then we use the **image-based algorithm** to process the easy-to-classify categories and **3D convolution network** for more complex actions.
We won **2nd** in the action recognition track of **Teda·Huabo cup innovation and entrepreneurship challenge**

Extreme Low Resolution Action Recognition May 2019 – Present

In order to solve the problem that the target in the back corner of the court is too small, we proposed a new method to recognize **extreme low-resolution action**. We make full use of the high-resolution information of separate spatial and temporal features to promote low resolution recognition by acquiring better attention. Experiments show that our proposed method can improve LR recognition accuracy **up to 4.4%**. The results achieve **state-of-the-art performance** on 12*16 HMDB51.
The corresponding paper is submitted to AAAI 2020.

Monocular Outdoor Semantic Mapping with a Multi-task Network July 2018 - March 2019

We proposed a novel multi-task network is designed for semantic prediction and monocular depth estimation. To overcome the inconsistency depth prediction for reconstruction, post-processing steps with the superpixelization and the effective 3D representation approach are obtained to give the final semantic map.
The corresponding paper is accepted by IROS 2019.

HONORS

- Second Prize Merit-based Scholarship, SCU 7/2019
- The Second Prize, 6th TedaHuabo Cup, Action Recognition Track 6/2019
- Excellent postgraduate student, SCU 9/2018
- Third Prize Merit-based Scholarship, CQUPT 9/2015