

Peiqin Zhuang

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Education

2016-present *Master candidate* of Control Engineering
School of Electronic, Electrical and Communication Engineering, **University of Chinese Academy of Sciences**
Advised by Prof. [Yu Qiao](#) and Prof. [Yali Wang](#)

2012-2016 *Bachelor of Science* in Biomedical Engineering
School of Geosciences and Info-physics, **Central South University**
Thesis title: Image Classification with Machine Learning Methods

Publications

Peiqin Zhuang, Yali Wang and Yu Qiao. WildFish: A Large Benchmark for Fish Recognition in the Wild, 26th ACM Multimedia Conference (ACM MM), Seoul, Korea, Oct. 22-26, 2018.(Oral)
Peiqin Zhuang, Linjie Xing, Sheng Guo, Yanlin Liu, Yu Qiao. Marine Animal Detection and Recognition with Advanced Deep Learning Models,” Proc. of Conference and Labs of the Evaluation Forum (CLEF), 2017

Research Interests

Cross-modal Analysis Language Applications in Computer Vision
Fine-grained Classification

Research Experiences

Nov. 2017-Apr. 2018 Build up a Large-scale Benchmark for Fish Recognition

Due to previous experience in fish competition, we find that it is essential to build a large-scale database for fish recognition. We build up a fish dataset through crawling technology and instruct annotators to clean them. Based on the procedure of dataset creation, we propose two practical problems in real life as follows:

- **Openset Classification Problem.** When we crawled images from professional website and found that there exist lots of images which can not be identified by volunteers. In deed, there are many unknown species to us in our planet. To solve it, we explore some approaches related to Openset problems and make some good practices on it.
- **Fine-Grained Classification with Text Guidance.** Since our classification level is atomic, some species are high-confused. Comparing with the cognitive process of human beings, we often learn something new through comparing two similar objects to find their differences. To this end, we collect some word descriptions from reef forums which contain different descriptions for both two similar species. With the guidance of **pairwise text**, CNN can find the most distinguished parts contributing to the classification. Our method gains significant improvements in our dataset compared to some state-of-art approaches.

Jul. 2017-Oct. 2017 Research on Vision Robots in Underwater Environment

In this project, we cooperated with other groups to develop an equipment that can not only collect and transfer data from underwater environment, but also use computer vision technology to analyse data. We utilize advanced deep neural network to

recognize fish species and separate fish objects from complicated environment.

Mar. 2017-May. 2017 SeaCLEF2017 Competition

During this period, we took part in the competition, which aims to borrow advanced technologies from computer vision for ecological surveillance and biodiversity monitoring. We participated in two subtasks: *Automated Fish Identification and Species Recognition on Coral Reef Videos* and *Marine Animal Species Recognition using Weakly-Labelled Images and Relevance Ranking* with both 1st and 2nd Place.

Awards

2017	Excellent Student scholarship of Shenzhen Institute of Advanced Technology
2017	Excellent Student Prize of School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences
2016	Outstanding Graduate of Central South University
2015	Excellent Prize of MathorCup Mathematical Contest in Modeling
2012-2015	Third Prize of Central South University for three years