Shi Tang

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Education

Tsinghua University Beijing, China
- School of Software; GPA: 3.71/4 *Sept. 2021 – Present*

Courses: Deep Learning (A), Automaton and Formal Logic (A), Data Stream Systems Modeling and Simulation (A-)

Dalian University of Technology Dalian, China
- International School of Information Science & Engineering; GPA: 4.15/5 *Sept. 2017 – June. 2021*

Courses: Machine Learning (98), Data Structure and Algorithms (94), Signal Processing (95), Computer Networking (96)

Projects

- **Task-Specific Few-Shot Image Classification by Balancing Sample- and Class-Level Generalization** *Jun. 2022*
  - Targeting at few-shot classification tasks in real-world scenarios where new tasks may contain both base and novel classes.
  - Propose to fuse features of normal and episodic pretraining weighted by a proposed Cross-Attention Module to balance sample- and class-level generalization task-specifically.
  - Improvements of **16.30%**, **6.91%** and **1.46%** against normal pretraining, episodic pretraining and Meta-Baseline, respectively for accuracy on reconstructed miniImageNet under 1-shot setting.
- **Vehicle Mounted Multi Band Stereo Vision Perception System** *2018 – 2019*
  - Responsible for improving the sub-pixel corner detection algorithm based on the checkerboard pattern, as well as the collection, calibration and rectification of infrared images.
  - Propose a novel infrared calibration board design scheme.
  - Won the **bid of the Army Equipment Department** in July 2019.
- **Scene Depth Perception based on Binocular Infrared Camera** *2019 – 2020*
  - Extend the binocular depth estimation task from visible band to infrared band.
  - Propose a novel domain adaption strategy and a feedback learning strategy to reduce the domain gap between different datasets.
- **Image Enhancement System based on IRCNN** *Aug. 2018*
  - An image enhancement system with functions of image IO, editing and enhancing images.
  - Responsible for the implementation of the image enhancement algorithm and GUI.
- **Image Database and the Corresponding Search System for Emoji** *Feb. 2020*
  - A website for Emoji collection and retrieval. TBIR, CBIR and hybrid retrieval are supported.
  - Responsible for image crawling and the realization of TBIR.

Papers

- **Cross Modality Depth Estimation via Unsupervised Stereo RGB-to-Infrared Translation**
  First author, submitted to Neurocomputing
  - Propose to estimate depth in a cross-modal way to improve robustness to reflections, brightness changes and help recover object contours.
  - Propose a Fourier domain adaptation strategy and a multi-space warping regularization for synthesizing stereo IR images.
  - Error reduction of **6.13%**, **5.10%** and **20.04%** on D1-all against GWCNet, Monodepth and Monodepth2, respectively, and **31.13%** on Total 3-px error against PSMNet.

Awards

2017 – 2018 Scholarship for Academic Excellence
2018 – 2019 Scholarship for Academic Excellence
2019 – 2020 Scholarship for Academic Excellence
2017 – 2018 Ling Shui Scholarship
Provincial third prize in CUMCM 2019
2021 Outstanding Graduate of DUT