Haidong ZHU

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ACADEMIC INTEREST

Machine Learning, Deep Learning

EDUCATION

Department of Electronic Engineering, Tsinghua University Sept. 2015-Jul. 2019(expected)

B.E. in Electronic Information Science and Technology Overall GPA: 3.61/4.0 (91.1/100)

Relevant Courses: Pattern Recognition, Auditory-visual Information System, Artificial Intelligence, Media and Cognition, Software Engineering, Data and Algorithm, Operating System, Probability and Stochastic Processes

SKILLS

Programming Skills: C/C++, MATLAB, Python, Git, Matlab, Verilog.

Deep Learning Frameworks: Caffe, PyTorch, TensorFlow, Keras

RESEARCH EXPERIENCES

Unsupervised 3D Feature Learning by Point Cloud Completion | Tsinghua University Oct. 2018 –present

Advisor: Assoc. Prof. Jiwen Lu

- Investigated point cloud completion as a new pretext task for 3D point sets
- Applied self-supervised strategy to supervise model training.

Global Lifted Multicut with Biological Constraints for Connectomics | Harvard University Jul. 2018 – Sept. 2018

Advisor: Prof. Hanspeter Pfister

- Improved present 3D dense cell segmentation result for SNEMI, PNI and Kasthuri dataset
- Guided proofreading and lifted multicuts with biological constrains for error correction in 3D segmentation result

Hardness-Aware Deep Metric Learning | Tsinghua University Feb. 2018 – May 2018

Advisor: Assoc. Prof. Jiwen Lu

- Designed an algorithm using encoder-decoder with hardness aware mechanism in metric learning.
- Reached state-of-the-art in the CUB-200-2011, Cars196 and Stanford Online Products datasets.

A Generalization Study in Image Captioning | Tsinghua University Oct. 2017 – Jan. 2018

Advisor: Assoc. Prof. Jiansheng Chen

- Verified present model for image captioning can overfit samples with a great number of erroneous data.
- Designed a model to generate plausible predicting future captions with overfitting capability model.

SELECTED SYSTEMS

Competition & Lecture Management System Dec. 2017

- Lecture management system with wechat and website version.
- Applied vanishing point detection with face alignment to reconstruct 3D space through one photo.

Video-audio Similarity Evaluation System Dec. 2017

- Used PyTorch and TensorFlow to extracted feature from raw digital video and audio input.
- Designed a video-audio similarity evaluation system with GRU framework based on extracted feature.

Online Big Data Face Recognition System Jul. 2017

- Applied JPEG compression algorithm and Information Hiding to image process.
- Trained a color-based face detection model and revised algorithms in electronic music synthesis.

Other Projects:

Speech Fragments Reconstruction by Strengthening and De-Noising Signals

De-noising Kinect Signal and Revising Hand Gesture Detection

AWARDS AND HONORS

- 'Team Style' Programming Competition 2016
- Social Practice Excellence Award 2016/2017