

YAN HAO

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RESEARCH INTERESTS

Computer Vision(Video, 3D Vision combined with Robotics), Deep Learning

EDUCATION

Shanghai Jiao Tong University, China

Sept. 2016 - Jun. 2020

- B.S. in Computer Science, **ACM Class**, Zhiyuan College
- **Advisor:** Prof. **Yong Yu** and Prof. **Cewu Lu**

University of California, Berkeley

Sept. 2019 - Present

- Visiting Student in Berkeley DeepDrive & BAIR lab
- **Advisors:** Prof. **Trevor Darrell** and Prof. **Fisher Yu**
- **GPA:** 3.65/4.0 (Computer Vision:100/100)
- **Standardized Tests:** **TOEFL:**106(L27,S24,R27,W28), **GRE:**319(150+169+3.5), CET-6: 590, CET-4: 654

MANUSCRIPTS

3D Objectness Estimation via Bottom-up Regret Grouping

In submission

- Zelin Ye, **Yan Hao**, Liang Xu, Rui Zhu, Cewu Lu
- Area: Segmentation, grouping and shape

PAL-Net: Predicate-Aware Learning for Scene Graph Generation

In submission

- Liang Xu, Yong-Lu Li, Mingyang Chen, **Yan Hao**, Cewu Lu
- Area: Scene analysis and understanding

PUBLICATIONS

Visual Rhythm Prediction with Feature-Aligned Network [[Paper](#)]

MVA 2019

- Yutong Xie, Haiyang Wang, **Yan Hao**, Zihao Xu
- The paper proposed a data-driven visual rhythm prediction method, in which several visual features are extracted and then fed into an end-to-end neural network to predict the visual onsets.

RESEARCH EXPERIENCE

DeepDrive & BAIR, UC, Berkeley

Jul. 2019 - Present

- Advisor: Prof. **Fisher Yu** and Prof. **Trevor Darrell**
- **Video Object Segmentation**

We target at conducting instance level object segmentation on driving videos using mask propagation technique and optical flow.

Machine Vision and Intelligence Group

Jul. 2018 - Jul. 2019

- Advisor: Prof. **Cewu Lu**
- **Project 1: 3D Objectness**

We propose a robust 3D objectness estimation method in a bottom-up manner, i.e. first over-segment scene point clouds and then group them iteratively with a novel regret mechanism to withdraw incorrect groupings. Our experiments achieved state-of-the-art 3D objectness methods with a small number of proposals in two difficult datasets, GMU-kitchen and CTD.

- **Project 2: Predicate Aware Learning Network (PAL-Net)**

Our proposed PAL-Net has two ingredients for scene graph generation. First we introduce a novel embedding

loss for translation embedding in a metric learning manner. Then we take predicates as conditions for contextual modeling to alleviate noise. Extensive experiments on two challenging datasets, VRD and Visual Genome yield a state-of-the-art performance.

COURSE PROJECTS

- 2016

Chinese Battle Chess AI: A Chinese Battle Chess program
- 2017

STL: Implementation of three data structures in C++: vector,map and deque
Mips-simulator: C++ program that simulates five-stage pipeline to process MIPS instructions.
- 2018

RISC-V CPU: CPU simulator with five-stage pipeline, implemented in Verilog HD.
Text Classification: A classification model for article recommendation.
Item Recommendation: A recommendation system to predict the preference score of the given user on the specific items.
Compiler[Code]: A compiler in Java whose source language is simplified C and target language is MIPS assembly.

TEACHING EXPERIENCE

C++ Programming(CS152): Served as a teaching assistant, duty included designing part of the homework and exam problems and helping students with their problems about homework.

AWARDS AND HONORS

- Meritorious Winner in Mathematical(Interdisciplinary) Contest in Modeling((MCM/ICM)

2018
- Xing Cai Honorary Scholarship, Shanghai Jiao Tong University

2017
- Zhiyuan Honorary Scholarship, Shanghai Jiao Tong University

2016,2017,2018

SKILLS

Programming Languages: Python(PyTorch, TensorFlow), C/C++, Java, Matlab, Latex