Mingfei Chen

lasiafly@163.com

EDUCATION

Huazhong University of Science and Technology　　　　　　　　　　　　　Sep 2016 - Jun 2020
Computer Science and Technology Bachelor　　　　　　　　　　　　　　　　　　Wuhan, China
- GPA: 3.96 / 4.00
- Honors & Awards:
  - Huazhong University of Science and Technology Undergraduate Excellent Student (Top 1% in 35000)
  - Huazhong University of Science and Technology Merit Student Scholarship

RESEARCH EXPERIENCE

Sensetime & University of Washington, Seattle　　　　　　　　　　　　　　Nov 2020 - Present
Advisor: Jenq-Neng Hwang　　　　　　　　　　　　　　　　　　　　　　　　Beijing, China
Project: Online Multi-object Tracking (MOT)
- Addressed the challenges of the online multi-object tracking problem as the primary researcher.

Sensetime & Beihang University　　　　　　　　　　　　　　　　　　　　　Jul 2020 - Nov 2020
Advisor: Si Liu　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Beijing, China
Project: Human-object Interaction (HOI)
- Formulated HOI detection as a set prediction problem as the primary researcher. The new formulation breaks the instance-centric and location limitations of the existing methods.
- Proposed a novel one-stage HOI framework with transformer to adaptively aggregate the most suitable features.
- Designed an instance-aware attention module to introduce the instance information into the interaction branch.
- Without introducing any extra features, our method achieves 31% relative improvement over the second-best one-stage method on the HICO-DET dataset especially.
- The paper has been accepted to CVPR2021.

University at Buffalo-SUNY & Chinese University of Hong Kong, Shenzhen　　　Jul 2019 - Nov 2019
Advisor: Chang Wen Chen, Junsong Yuan　　　　　　　　　　　　　　　　　Shenzhen, China
Project: Cross-modal Video Retrieval (Vision Language)
- Addressed the natural language video retrieval efficiency and effectiveness problem as the primary researcher.
- Devised a temporal anchor-free structure that performed retrieval directly on each temporal location within the target region. Built a top-down pyramid structure to make use of diverse temporal receptive fields, and a dilated convolutional module to integrate vision-language features more comprehensively.
- The new method reduces retrieval time by a factor of 5 and outperforms previous work by 10% on retrieval accuracy.
- Outstanding undergraduate graduation thesis.

INTERNSHIP EXPERIENCE

SenseTime　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Jul 2020 - Present
Research Intern, Sensetime Research　　　　　　　　　　　　　　　　　　　Beijing, China
- Conducted research on visual relation recognition, such as Human-object Interaction and Multi-object Tracking.
- Applied the proposed method in research to the real-life application scenario (e.g., dangerous action recognition in the intelligent car) and further optimized the model based on the real-life data.

ByteDance　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Sep 2019 - Apr 2020
Research Intern, Computer Vision Group　　　　　　　　　　　　　　　　　　Shenzhen, China
- Reconstructed the hand pose detection network with a lightweight backbone. Finetuned and validated the new model based on millions of real-life user data, ensuring the high run speed while maintaining the comparatively robust detection precision.
- Used foreground/background segmentation and human detection to discover all the human bodies in the video.
- Applied guided filter, detection to improve the segmentation performance, especially under distant multi-person scenarios.

PUBLICATIONS

- [1] **Mingfei Chen***, Yue Liao*, Si Liu, Zhiyuan Chen, Fei Wang, Chen Qian. "Reformulating HOI Detection as Adaptive Set Prediction." Accepted to CVPR 2021.

MISCELLANEOUS

- **Skills:** Python , PyTorch , C , C++ , Java , Verilog , SQL