Joya Chen

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- Chinese Name: CHEN, ZHUO

EDUCATION

University of Science and Technology of China (USTC) ***Sept. 2018 - Jun. 2021***

- Master of Computer Science and Technology, GPA: 3.1/4.3 - Advisor: Prof. Enhong Chen

Wuhan University of Technology (WUT) ***Sept. 2014 - Jun. 2018***

- Bachelor of Vehicle Engineering, GPA: 3.6/4.0 - Advisor: Assoc. Prof. Jianguo Liu

RESEARCH EXPERIENCE

My research interests lie in visual recognition, video understanding, and 3D hand analysis. From Aug. 2021 to Jan. 2022, I will work as a research assistant in the Department of Computer Science, School of Computing, National University of Singapore, supervised by Asst. Prof. Angela Yao Yingjie.

Computer Vision Research Intern on Object Detection Jun. 2018 – Nov. 2019
Research Intern in Tencent *Tencent, Shenzhen & Hefei, China*

· Deployed object detectors on the mobile phone to detect special objects in the mobile game.
· Proposed *Overlap Sampler* to address the sample selection problem in object detection. The paper was published in WACV 2020. [Paper] [Code]
· Obtained 1st place in PASCAL VOC Object Detection Competition 3 Leaderboard.

Research on General Object Detection Jan. 2019 – Present
Researcher *USTC, Hefei, China*

· Surveyed the foreground-background class imbalance problem in object detection. The paper was published in MIPR 2020. [Paper]
· Proposed *Residual Objectness* to address the foreground-background class imbalance problem in a learning-based manner. The paper received good reviews in Pattern Recognition. It was now in the revision submitted process. [Paper]
· Proposed *Sampling-Free* to challenge the necessity of re-sampling/re-weighting heuristics for training accurate deep object detectors under the class imbalance problem. The paper was accepted by IEEE Transactions on Image Processing. [Paper] [Code] (285 stars)

Research on Monocular 3D Hand Reconstruction Aug. 2019 – Present
Researcher, cooperating with Chinese Academy of Sciences *USTC & CAS, Hefei, China*

· Proposed *MANO-GCN* to capture implicit spatial cues of parameters in MANO hand model.
· The paper was accepted as ICME 2021 oral presentation. [Paper] [Code]

Research on High-level Video Understanding Dec. 2019 – Present
Researcher *USTC, Hefei, China*

· Proposed CrossGraphAlign for visual-textural relationship alignment in video moment retrieval.
· The paper was published in SCIENTIA SINICA Informationis (CCF A Chinese journal). [Paper]
· Proposed the social graph generation task in the video. The paper was accepted as ACM MM 2021 oral presentation.

PUBLICATIONS

• **Joya Chen**, Dong Liu, Tong Xu, Shiwei Wu, Yifei Chen, Enhong Chen. Is Heuristic Sampling Necessary in Training Deep Object Detectors? *IEEE Transactions on Image Processing*, 2021. [Paper] [Code]

• Shiwei Wu, **Joya Chen**, Tong Xu, Liyi Chen, Lingfei Wu, Yao Hu, Enhong Chen. Linking the Characters: Video-oriented Social Graph Generation via Hierarchical-cumulative GCN. In *ACM MM 2021* (Oral).

• **Joya Chen**, Dong Liu, Bin Luo, Xuezheng Peng, Tong Xu, Enhong Chen. Residual Objectness for Imbalance Reduction. *Pattern Recognition* (revision submitted). [Paper]

• Qi Wu*, **Joya Chen***, Zhou Xu, ZhiMing Yao, Xianjun Yang. Capturing Implicit Spatial Cues for Monocular 3D Hand Reconstruction. In *ICME 2021* (Oral). * Equal contribution. [Paper] [Code]

• **Joya Chen**, Hao Du, Yufei Wu, Tong Xu, Enhong Chen. Cross-Modal Video Moment Retrieval Based on Visual-Textual Relationship Alignment. *SCIENTIA SINICA Informationis*, 2020 (in Chinese). [Paper]

• **Joya Chen**, Qi Wu, Dong Liu, Tong Xu. Foreground-Background Imbalance Problem in Deep Object Detectors: A Review. In *MIPR 2020*. [Paper]

• **Joya Chen**, Bin Luo, Qi Wu, Jia Chen, Xuezheng Peng. Overlap Sampler for Region-Based Object Detection. In *WACV 2020*. [Paper] [Code]

• Xianfeng Liang, Likang Wu, **Joya Chen**, Yang Liu, Runlong Yu, Min Hou, Han Wu, Yuyang Ye, Qi Liu, Enhong Chen. Long-term Joint Scheduling for Urban Traffic. *KDD CUP 2019* (PaddlePaddle Special Award). [Paper] [Code]

HONORS AND AWARDS

• Ranked 1st in HO-3D Leaderboard in Mesh Error/AUC and F@15mm metrics	Dec. 2020
• First-class Academic Scholarship for Excellent Graduate Students (¥12,000)	Sep., 2020
• KDD CUP 2019 Regular ML Track, PaddlePaddle Special Award (Top 2, $4,000)	Aug. 2019
• Kaggle Competition on Human Protein Image Classification, Gold Medal (11/2160)	Jan. 2019
• Ranked 1st in PASCAL VOC Object Detection Competition 3 Leaderboard	Sep. 2018
• Outstanding Graduate of Wuhan University of Technology	Jun. 2018
• Ranked 1st in the National Postgraduate Entrance Examination (USTC CS, 1/300+)	Mar. 2018

SKILLS

Computer Languages	Python, C/C++, Java, Shell, Matlab, C#
Tools	Pytorch, Caffe, MySQL, LaTeX, Vim
English	IELTS 6.5 (Reading 8.0)