HANWEN JIANG

Phone: +1 (702) 613-7764 | Email: hwjiang1510@gmail.com | Web: http://jiangolder.github.io

EDUCATION

University of California, San Diego San Diego, USA
- *M.S. in Computer Science & Engineering* *2019-Present*
- **Advisor**: Prof. Xiaolong Wang **GPA**: 4.0/4.0

Wuhan University Wuhan, China
- *B.Eng. in Measuring & Control Technology and Instrumentations* *2015- 2019*
- **GPA: 3.81** (90/100) **Major GPA**: 3.88 (92/100) **Ranking:** 1/46

PUBLICATION

[3] **Hanwen Jiang***, Shaowei Liu*, Jiashun Wang, Xiaolong Wang (* equal contribution)
Hand-Object Contact Consistency Reasoning for Human Grasps Generation
submitted to CVPR 2021

[2] Shaowei Liu*, **Hanwen Jiang***, Jiarui Xu, Sifei Liu, Xiaolong Wang (* equal contribution)
Semi-Supervised 3D Hand-Object Poses Estimation with Interactions in Time
submitted to CVPR 2021

[1] Qin Zou, **Hanwen Jiang**, Qiyu Dai, Yuanhao Yue, Long Chen, Qian Wang
Robust Road Lane Detection from Continuous Driving Scenes Using Deep Neural Networks,
IEEE Transactions on Vehicular Technology 2020

RESEARCH EXPERIENCE

Wang Group, UCSD ECE Department, *Advisor: Prof. **Xiaolong Wang*** Jan 2020-Now

Semi-Supervised 3D Hand-Object Poses Estimation with Interactions in Time
- Proposed a network for estimating hand and object poses simultaneously.
- Proposed a novel contextual reasoning module for feature fusion for taking advantage of physical dependency between hand-object, which uses the information of hand for reasoning the object poses.
- Innovatively leveraged multiple advanced spatial-temporal consistency during pseudo-label selection.
- Proposed a teacher-student framework for semi-supervised learning, method demonstrated **SOTA** performance on HO-3D and FPHA dataset and strong cross-domain generalization capability.

Hand-Object Contact Consistency Reasoning for Human Grasps Generation
- Proposed two networks, a generative network for generating human grasps given an object and a deterministic network for modeling hand-object contact information.
- Proposed two novel losses for training: a hand-centric loss encourages hand to contact object surface and another object-centric loss makes sure the object common contact region be touched by hand.
- During testing, leveraged the consistency between outputs of two networks for adapting on testing objects.
- Method outstrip previous ones with a large margin, and results are comparable to ground truth on Obman, HO-3D and FPHA dataset.

Learning Robot Grasps from Human Video Demonstration
- Currently working on building a novel large-scale dataset with full hand-object pose annotations on multiple tasks.

The NIS&P Lab, School of Computer, Wuhan University, *Advisor: Prof. Qin Zou* Oct 2017-Feb 2019

Robust Road Lane Detection from Continuous Driving Scenes Using Deep Neural Networks
- Proposed a novel semantic-seg algorithm for short videos: a fully convolutional encoder-decoder for extracting and recovering feature map, and centered ConvLSTM for learning temporary feature propagation.
- Collected three continuous driving scene datasets for lane detection: a huge comprehensive dataset for training and two testsets for testing overall performance and robustness respectively.
- The model demonstrated a **98%** accuracy, **best robustness** and **220Fps** speed on our dataset, and SOTA performance on TuSimple lane dataset.

General Co-Saliency Object Detection in Single Image
- Experimented with general detection and segmentation algorithms for identifying co-occurring objects in single image.
- Utilized RPN to find triplet proposals: an anchor proposal, a positive proposal and a negative proposal, which are objects with similar classes (e.g. white, white and black dog respectively).
- Proposed a fully-connected regional feature mapping block to discriminate the co-occurrence positive object samples.
- Combined a fully-convolutional segmentation decoder in the network to get the pixel-wise co-saliency map.

UCLA NLP Lab, UCLA CSST Program, *Advisor: Prof.* ***Kai-Wei Chang*** July 2018-Jan 2019

Group Bias Analysis on YELP Review Dataset

- Designed baseline model for gender classification and sentiment analysis, and demonstrated an accuracy of **87%** and **76%**, higher than the champion of YELP challenge.
- Optimized the rationale analysis model to identify key words for gender and sentiment classification, and used them to analyze different speech patterns, especially word-pairs, between male and female qualitatively.
- Fine-tuned the word embedding of the word-pairs to prevent bias in word-embedding-based downstream tasks.

INTERN EXPERIENCE

Detection Group, MEGVII Face++, Advisor: Dr. Gang Yu Jan 2019-May 2019

Fine-grained Lane and Road Joint Segmentation in Urban Scenes

- Built a fine-grained lane segmentation model for urban scene auto-driving, demonstrated **80%** (selected 13classes) and **65%** (overall, 30+ classes) mIoU on Apollo Landscape Lane Dataset (official baseline with 40% mIoU).
- Utilized dilated conv and spatial pyramid fusing to enlarge the receptive field for segmenting continuous lane-line.
- Pruned the W-shape convolution structure and SE blocks, demonstrated 13Fps on images with 2000*2500 resolution.
- Multi-task network: fused a drivable area segmentation model (a shared backbone and two specialized segmentation branches), and use domain adaptation techniques for fine-tuning and joint training.

Face Recognition for Campus Security

- Optimized face recognition algorithm for handling different light conditions in campus scenes.

AWARDS & HONORS

- UCLA Cross-Disciplinary Scholars in Science and Technology (CSST) Scholarship 2018
- National Scholarship (highest honor for Chinese undergraduate students, Top **1%**) 2016 & 2017
- Outstanding Graduation Thesis (Top **5%**) 2019

SERVICE

Reviewer for CVPR

SKILLS & INTEREST

Programming language: Python, C++, Java, MATLAB, Verilog, assembly language, Bash, Latex, SQL
Hardware and Tools: FPGA, Sing-chip Development, JetBot, Git, Docker, Kubenetes, OpenCV, PyTorch, TensorFlow
Tools: Git, Docker, Kubenetes, OpenCV, PyTorch, TensorFlow, CUDA, SolidWorks