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Hanwen Jiang

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EDUCATION

University of California, San Diego (UCSD), USA Sep 2019-Jun 2021
M.S. in Computer Science and Engineering
✧ **GPA: 4.0/4.0**, Courses: Computer Vision, Probabilistic Learning, ML on Geometry Data, Recommender System

Wuhan University (WHU), Wuhan, China Sep 2015-Jun 2019
B.Eng. in Measuring & Control Technology and Instrumentations, Electronic Engineering School
✧ **GPA: 3.81/4.0** (90/100), **Ranking: 1/46**
✧ **Honor:** National Scholarship Recipient **(**1%, 2016 & 2017), Outstanding Graduation Thesis (5%)

PUBLICATION

- *Semi-Supervised 3D Hand-Object Poses Estimation with Interactions in Time,* Shaowei Liu*, **Hanwen Jiang***, Jiarui Xu, Sifei Liu, Xiaolong Wang (* equal contribution, submitted to **NeurIPS'2020**)
- *Robust Road Lane Detection from Continuous Driving Scenes Using Deep Neural Networks*, Qin Zou, **Hanwen Jiang**, Qiyu Dai, Yuanhao Yue, Long Chen, Qian Wang (***IEEE Transactions on Vehicular Technology**, 2020*)

SPECIALIZED SKILLS

✧ Python, C++, Java, MATLAB, PyTorch, TensorFlow, OpenCV, Git, Docker, Kubernetes

INTERN EXPERIENCE

Research Intern | Advisor: Gang Yu | Detection Group, **MEGVII Face++** 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 instances.
- 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.

RESEARCH EXPERIENCE

Research Assistant |Advisor: **Xiaolong Wang** (Assistant professor, CSE department, **UCSD**) Jan 2020-Now
Understanding human hand-object interaction
- Proposed a network for joint hand-object 3D pose estimation, demonstrated SOTA on FPHA and HO-3D dataset, and a first-author paper submitted to NeurIPS 2020.
- Now working on hand affordance prediction for grasping object from multi-modality data.

Research Assistant |Advisor: Qin Zou (Associate professor, School of Computer, **WHU**) Oct 2017-Feb 2019
Semantic segmentation algorithm and application on lane position detection
- 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, see our PAPER for details.

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).
- Created 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.

Research Assistant | Advisor: **Kai-Wei Chang** (Assistant Professor, CS School, **UCLA CSST Program**) 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.