Weijian Xu

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Research Interests

Deep Learning and Computer Vision

Education

University of California San Diego, La Jolla, CA **2018-Present**
Ph.D. in Computer Science
- Advisor: Zhuowen Tu

University of California San Diego, La Jolla, CA **2016-2018**
M.S. in Computer Science
- Overall GPA: 3.97/4.00
- AI track GPA: 4.00/4.00

Beihang University, Beijing, China **2012-2016**
B.E. in Computer Science
- Selected into Honors College
- Overall GPA: 3.88/4.00

Research Experience

University of California San Diego, La Jolla, CA **2017-Present**
Graduate Research Assistant, Mentor: Zhuowen Tu
- Focus on structural representation learning and apply it to a wide range of applications.
- Developed an end-to-end multi-scale transformer for line segment detection. This work is accepted by CVPR 2021.
- Developed an attentional constellation model for few-shot image classification. This work is accepted by ICLR 2021.
- Developed a geometry-aware skeleton detection method with a weighted Hausdorff distance and a geometrically weighted cross-entropy loss. This work is accepted by BMVC 2019.
- Developed the Wasserstein introspective neural network and applied it to 2D and 3D generative models. Related works are accepted by CVPR 2018 and AAAI 2019.

Microsoft AI and Cloud, Redmond, WA **2020**
Research Intern, Mentor: Baoyuan Wang
Developed a self-supervised face representation learning framework for detection, tracking and other downstream tasks.

Facebook AI Applied Research, Menlo Park, CA **2019**
Research Intern, Mentor: Tamara Berg
Developed a robust fashion representation for instance retrieval task by restoring deformed instances and masking occluded features.

Microsoft Research Asia, Beijing, China **2018**
Research Intern, Mentor: Jingdong Wang
Developed a few-shot learning algorithm by applying task-dependent disentangled feature transformation into feature embedding.

PUBLICATIONS	6. Yifan Xu*, **Weijian Xu***, David Cheung and Zhuowen Tu. Line Segment Detection Using Transformers without Edges. In *IEEE/CVF Computer Vision and Pattern Recognition* (CVPR), 2021 (**Oral**).

6. Yifan Xu*, **Weijian Xu***, David Cheung and Zhuowen Tu. Line Segment Detection Using Transformers without Edges. In *IEEE/CVF Computer Vision and Pattern Recognition* (CVPR), 2021 (**Oral**).

5. **Weijian Xu***, Yifan Xu*, Huaijin Wang* and Zhuowen Tu. Constellation Nets for Few-Shot Learning. In *The Ninth International Conference on Learning Representations* (ICLR), 2021.

4. Zheng Ding, Yifan Xu, **Weijian Xu**, Gaurav Parmar, Yang Yang, Max Welling and Zhuowen Tu. Guided Variational Auto-Encoder for Disentanglement Learning. In *IEEE/CVF Computer Vision and Pattern Recognition* (CVPR), 2020.

3. **Weijian Xu**, Gaurav Parmar and Zhuowen Tu. Geometry-Aware End-to-End Skeleton Detection. In *British Machine Vision Conference* (BMVC), 2019.

2. Wenlong Huang*, Brian Lai*, **Weijian Xu** and Zhuowen Tu. 3D Volumetric Modeling with Introspective Neural Networks. In *the Thirty-Third AAAI Conference on Artificial Intelligence* (AAAI), 2019.

1. Kwonjoon Lee, **Weijian Xu**, Fan Fan and Zhuowen Tu. Wasserstein Introspective Neural Networks. In *IEEE/CVF Computer Vision and Pattern Recognition* (CVPR), 2018 (**Oral**).

AWARDS		
NeurIPS Top 10% Reviewer		**2020**
GSA Travel Grant in UC San Diego		**2018**
National Scholarship of China		**2015**
Honorable Prize in the Interdisciplinary Contest in Modeling		**2015**

TEACHING EXPERIENCE	**Teaching Assistant**, University of California San Diego CSE 151A - Introduction to Machine Learning	**Spring 2021**
	Teaching Assistant, University of California San Diego CSE 152A - Introduction to Computer Vision I	**Winter 2021**
	Teaching Assistant, University of California San Diego COGS 118A - Supervised Machine Learning Algorithms	**Winter 2020**
	Teaching Assistant, University of California San Diego COGS 181 - Neural Networks and Deep Learning	**Spring 2019**
	Teaching Assistant, University of California San Diego COGS 118A - Introduction to Machine Learning I	**Winter 2018**

PROFESSIONAL ACTIVITY

Conference Reviewer:

- CVPR, ICCV. **2021**
- AAAI, CVPR, ECCV, NeurIPS. **2020**
- CVPR, ICCV. **2019**

Journal Reviewer:

- TPAMI.

Misc.   Languages and Frameworks: Python, C/C++, PyTorch.

Development Environment: Linux/Unix, macOS and Windows.

Fluent in English and Chinese.