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LIQIANG HE

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EDUCATION

Oregon State University	Corvallis, OR	Jan 2018 – Mar 2024
<ul style="list-style-type: none">• PhD in Computer Science, GPA: 3.7• Research Direction: Object detection, instance segmentation, video action recognition, video action segmentation, video instance segmentation, multiple object tracking, diffusion models.		
Oregon State University	Corvallis, OR	Sep 2015 – Jul 2017
<ul style="list-style-type: none">• M.S. in Computer Science, GPA: 3.8• Research Direction: machine learning, deep learning, species distribution.		

EMPLOYMENT AND EXPERIENCE

Graduate Research Assistant	AgAID Institute, Corvallis	Mar 2021 - Current
<ul style="list-style-type: none">• Lead a computer vision team focused on developing algorithms for Agricultural Robotics, detailed at https://agaid.org/. Current responsibilities include:<ul style="list-style-type: none">★ Tree Branch Segmentation: Developed a robust system to accurately segment tree branches in RGBD videos, facilitating tasks such as tree pruning and nut shaking.★ Trunk-width Estimation: Designed a tree trunk width estimation system, supporting measurements of fruit yield.★ Cross-Domain Tree Segmentation: Developed cross-domain learning techniques to achieve accurate tree segmentation, leveraging fully-annotated synthetic tree datasets and unlabelled real orchard tree datasets.★ Cross-Domain Multi-Modal Learning: Innovated methodologies that integrate motion features with appearance features, resulting in enhanced semantic segmentation performance.		
Applied Scientist Intern	Amazon 126 Lab, Bellevue, WA	June 2019 – Sep 2022 (4 times)
<ul style="list-style-type: none">• Developed visual perception algorithms for Amazon Astro robotics using computer vision, deep learning, and machine learning techniques. <p>More details about Amazon Astro can be found at: https://www.amazon.com/Introducing-Amazon-Astro/dp/B078NSDFSB</p>		

LANGUAGES AND FRAMEWORKS

- Python, Java, C, C++, Matlab, JavaScript, MySQL, R, PyTorch, Numpy, OpenCV, TensorFlow,
- mmdetection/mmdetection, detectron2, GPU, CUDA, 3D Vision, SLAM, GANs, NeRFs

PUBLICATIONS

- **Liqiang He**, Sinisa Todorovic. Cross-domain Semantic Segmentation with Transformers. Submitted to the European Conference on Computer Vision (ECCV), 2024.
- **Liqiang He**, Wei Wang, Albert Chen, Min Sun, Cheng-hao Kuo, Sinisa Todorovic. Bidirectional Alignment for Domain Adaptive Detection with Transformers. IEEE/CVF International Conference on Computer Vision (ICCV), 2023.
- T Wang, P Sankari, J Brown, A Paudel, **L He**, M Karkee, A Thompson, C Grimm, JR Davidson, S Todorovic. Automatic estimation of trunk cross sectional area using deep learning. European Conference on Precision Agriculture (ECPA), 2023.
- **Liqiang He**, Sinisa Todorovic. DEST: Object Detection with Split Transformer. IEEE/CVF conference on computer vision and pattern recognition (CVPR), 2022.
- **Liqiang He**, et al. A polar-edge context-aware (PECA) network for mirror segmentation. Image and Vision Computing (IVC), 2022.
- Rebecca Hutchinson, **Liqiang He**, and Sarah Emerson. Species Distribution Modeling of Citizen Science Data as a Classification Problem with Class-conditional Noise. The 31st AAAI Conference on Artificial Intelligence (AAAI), 2017.