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Liqiang He

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Education

Oregon State University **Corvallis, OR** **Jan 2018 – Jan 2024 (Expected)**

- **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.

Oregon State University **Corvallis, OR** **Sep 2015 – Jul 2017**

- **M.S. in Computer Science, GPA: 3.8**
- **Research Direction:** machine learning, deep learning, species distribution.

Oregon State University **Corvallis, OR** **Sep 2012 – Jul 2015**

- **M.Eng in Mechanical Engineering**
- **Research Direction:** Thermal Fluid Dynamics, Micro-combustor of CH4.

Southwest Jiaotong University **Chengdu, China** **Sep 2000 – Jul 2004**

- **BS in Mechanical Engineering**

Employment and Experience

Graduate Research Assistance **AgAID Institute, Corvallis** **Mar 2021 - Current**

- Lead a computer vision team to develop algorithms for Agriculture Robotics, see https://agaid.org/. Current tasks includes:
  - ⋆ Tree branch segmentation: segment tree branches in given given RGBD videos, supporting downstream tasks such as tree pruning and nuts shaking.
  - ⋆ Trunk-width estimation: segment tree trunks and estimate the trunk width, supporting measurements of fruit yield.
  - ⋆ Cross-domain tree segmentation: cross domain learning for tree segmentation on fully-annotated synthetic tree dataset and unlabelled real orchard tree dataset.

Applied Scientist Intern **Amazon 126 Lab, Bellevue, WA** **June 2019 – Sep 2022 (4 times)**

- Developing visual perception algorithms for Amazon Astro robotics using computer vision, deep learning, and machine learning techniques.
  Details about Amazon Astro: https://www.amazon.com/Introducing-Amazon-Astro/dp/B078NSDFSB

Graduate Research Assistance **OSU, Corvallis, OR** **Sep 2020 – Mar 2021 (4 times)**

- Developing a Transformer based graph model to predict motion pattern of ligands after binding to a protein.

Languages and Technologies

- Python, Java, C, C++, Matlab, HTML, CSS, JavaScript, MySQL
- PyTorch, TensorFlow, mmdetection/mmsegmentation, detectron2

Publications

- Rebecca Hutchinson, **Liqiang He**, and Sarah Emerson. Species Distribution Modeling of Citizen Science Data as a Classification Problem with Class-conditional Noise **AAAI 2017**).
- **He, Liqiang**, et al. A polar-edge context-aware (PECA) network for mirror segmentation. (**Image and Vision Computing (2022): 104402.**)
- **Liqiang He**, Sinisa Todorovic. DESTR: Object Detection with Split Transformer (**CVPR 2022**).
- 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. (**ECPA 2023**)
- **He, Liqiang**, Wei Wang, Albert Chen, Min Sun, Cheng-hao Kuo, Sinisa Todorovic. Bidirectional Alignment for Domain Adaptive Detection with Transformers. (**ICCV 2023**)