

# Muxin Wei

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## EDUCATION

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**Harbin Institute of Technology**  
M.Sc., Biomedical Engineering

Sep. 2023 – Present  
Harbin, China

**Dongguang University of Technology**  
B.Eng., Computer Science and Technology

Sep. 2018 – Jun. 2022  
Dongguang, China

– *Thesis: A Real-Time Vehicle Detection System Based on YOLOV5*

## PUBLICATIONS

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- **Wei, M.**, Chen, S., Wu, S., & Xu, D. (2024). Rep-MedSAM: Towards Real-time and Universal Medical Image Segmentation. (CVPR 2024 Workshop: Segment Anything In Medical Images On Laptop.)

## RESEARCH EXPERIENCE

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**CVPR 2024 Challenge: Segment Anything In Medical Images On Laptop**

Leader

May. 2024 – Jun. 2024

- Achieved **Winner Finalist Award** (3/102).
- Proposed an efficient knowledge distillation framework and gained a **2.7%** performance boost on the validation compared to the baseline.
- Adapted lightweight architectures for the resource-limited environment to promote model inference speed by almost **2×** for segmentation in medical images.
- Increased inference speed for 3D volume with multi-object **2.7×** by caching embeddings in slices.
- Curated over **10** datasets of different modalities with uniformed preprocessing scripts.

## PROJECTS

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- Implementation of **MLPs, AlexNet, GoogLeNet, VGGNets, ResNets, RNNs, LSTMs** based Nets
- Implementation of **Autoencoders, VAEs, GANs**
- **Deep Convolutional GAN** retraining on ImageNet-1k
- Deep **CNN-LSTM** Networks for Image Captioning
- Implementation of **Logistic Regression, KNN, Ridge Regression, MCMC Sampling** (Machine Learning course)

## CONFERENCE ACTIVITY

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**CVPR 2024 Workshop on Foundation Models For Medical Vision**

- Oral presentation for summary of our method and results analysis for the challenge.

## SKILLS

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**Programming Language:** Python, C/C++, L<sup>A</sup>T<sub>E</sub>X, Bash Script

**Libraries:** NumPy, PyTorch, Matplotlib, OpenCV, PIL, ITK, Pandas

**Tools:** Git, Docker, AWS S3, 3D Slicer

**Language:** Chinese (Native), English