

# Zihao Wei

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## Education

<b>University of Michigan</b> <i>M.S. in Computer Science and Engineering</i> <i>GPA:4.0/4.0</i>	Aug. 2023 – Apr. 2025 (Expected) <i>Ann Arbor, Michigan, USA</i>
<b>University of Michigan</b> <i>B.S.E in Computer Science and Engineering</i> <i>GPA:3.9/4.0</i>	Aug. 2021 – Apr. 2023 <i>Ann Arbor, Michigan, USA</i>
<b>Shanghai Jiao Tong University</b> <i>B.S. in Electronic and Computer Engineering</i> <i>GPA:3.7/4.0</i>	Sep. 2019 – Aug. 2023 <i>Shanghai, China</i>

## Experience

<b>Research Assistant</b> <i>Owen's Lab, University of Michigan</i>	Jun. 2022 – Present <i>Ann Arbor, Michigan, USA</i>
<ul style="list-style-type: none"><li>Enhanced image masking strategies for vision-language pretraining, improving training efficiency and downstream task performance.</li><li>Conducted research on Masked Autoencoders (MAE) and energy-based models in self-supervised learning.</li></ul>	
<b>Research Assistant</b> <i>VLAA, University of California, Santa Cruz</i>	May. 2022 – May. 2023 <i>Santa Cruz, California, USA</i>
<ul style="list-style-type: none"><li>Optimized MAE training and inference processes, achieving 80% reductions in computational and data costs.</li><li>Managed group's cloud computing resources, including GCP and AWS.</li></ul>	

## Selected Projects

<b>Insta</b> <i>Full Stack Instagram-like Web Application</i>	Java, JavaScript, HTML, CSS, Redis, MySQL, React, Spring Boot
<ul style="list-style-type: none"><li>Developed a multi-thread backend system using <b>Java</b> and <b>Spring Boot</b>.</li><li>Managed data effectively and efficiently with <b>Redis</b> and <b>MySQL</b>.</li><li>Crafted a responsive and dynamic front-end interface with <b>React</b>.</li><li>Deployed the application on <b>AWS</b>, focusing on scalability and high availability.</li></ul>	
<b>3DScan</b> <i>Mobile Application for 3D Scanning of Real-World Objects</i>	Python, PyTorch, Swift, Flask, Docker, Nginx
<ul style="list-style-type: none"><li>Implemented <b>Swift</b>-based front-end for efficient image capture in 3D scanning.</li><li>Implemented image processing algorithms and integrated AR functionality with <b>ARKit</b>.</li><li>Developed a <b>PyTorch</b>-powered backend with <b>Flask</b>, using NeRF for 3D model generation.</li><li>Handled deployment complexities using <b>Docker</b> and <b>Nginx</b>.</li><li>Led the project team, strategically planning and producing comprehensive documentation to streamline development processes.</li><li>Enhanced team collaboration by effectively communicating technical solutions, ensuring alignment and coherence in project efforts.</li></ul>	
<b>A-ESRGAN</b> <i>Super-Resolution Application for Real-Life Imagery</i>	Python, PyTorch
<ul style="list-style-type: none"><li>Developed an new method for super resolution that enhancing visual quality.</li><li>Implemented the framework with <b>Python</b> and <b>PyTorch</b> with performance optimization.</li><li>Maintained the open-source project on GitHub, receiving <b>over 100 stars</b>.</li></ul>	

## Publication

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**Wei, Z.\***, Pan, Z.\*, Owens, A. Efficient Vision-Language Pre-training by Cluster Masking. CVPR 2024.

Hui, M.\*, **Wei, Z.\***, Zhu, H. and Xia, F. and Zhou, Y., MicroDiffusion: Implicit Representation-Guided Diffusion for 3D Reconstruction from Limited 2D Microscopy Projections. CVPR 2024.

**Wei, Z.**, Wei, C., Mei J., Wang, Z., Li, X., Zhu, H., Wang H., Yuille, A., Zhou, Y. and Xie, C., MAE are Secretly Efficient Learners. CVPRW 2024.

**Wei, Z.**, Huang, Y., Chen, Y., Zheng, C., Gao, J. A-ESRGAN: Training Real-World Blind Super-Resolution with Attention U-Net Discriminators. PRICAI 2023.

Wang, Y\*, Li, Z\*, Mei, J.\*, **Wei, Z\***, et al. SwinMM: Masked Multi-view with Swin Transformers for 3D Medical Image Segmentation. MICCAI 2023.

## Skills

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**Programming Language:** *JAVA*, *Python*, *C++*, *SQL*, *Swift*, *JavaScript*, *HTML*, *CSS*

**Tools:** *Git*, *Markdown*

**Language:** *Chinese*, *English*