

# Tung-I Chen

## Curriculum Vitae

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📄 [tung-i.github.io/](https://tung-i.github.io/)

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### Education

- Ph.D. in CS **University of Massachusetts Amherst, Amherst, MA**  
◦ College of Information and Computer Sciences, 2023-present
- M.S. in CS **National Taiwan University, Taipei, Taiwan**  
◦ Computer Science and Information Engineering, 2019-2021
- B.S. in BME **National Cheng Kung University, Tainan, Taiwan**  
◦ Biomedical Engineering, 2015-2019

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### Publications

- ICRA 2023 **CFVS: Coarse-to-Fine Visual Servoing for 6-DoF Object-Agnostic Peg-In-Hole Assembly**  
Bo-Siang Lu, [Tung-I Chen](#), H.-Y. Lee, Winston H Hsu  
Accepted by International Conference on Robotics and Automation (ICRA), 2023 [\[Paper\]](#)
- ICRA 2023 **Coarse-to-Fine Point Cloud Registration with SE (3)-Equivariant Representations**  
Cheng-Wei Lin, [Tung-I Chen](#), H.-Y. Lee, W.-C. Chen, Winston H Hsu  
Accepted by International Conference on Robotics and Automation (ICRA), 2023 [\[Paper\]](#)
- ECCV 2022 **D2ADA: Dynamic Density-Aware Active Domain Adaptation for Semantic Segmentation**  
Tsungh-Han Wu, Y.-S. Liou, S.-J. Yuan, H.-Y. Lee, [Tung-I Chen](#), Winston H Hsu  
Accepted by European Conference on Computer Vision (ECCV), 2022 [\[Paper\]](#)
- TMM 2021 **Dual-Awareness Attention for Few-Shot Object Detection**  
[Tung-I Chen](#), Y.-C. Liu, H.-T. Su, Y.-C. Chang, Y.-H. Lin, J.-F. Yeh, Winston H Hsu  
Accepted by IEEE Transactions on Multimedia (TMM), 2021 [\[Paper\]](#) [\[Code\]](#)
- IROS 2021 **ODIP: Towards Automatic Adaptation for Object Detection by Interactive Perception**  
[Tung-I Chen](#), J.-W. Wang, Winston H Hsu  
Accepted by International Conference on Intelligent Robots and Systems (IROS), 2021 [\[Paper\]](#) [\[Video\]](#)
- NIPS Workshop 2019 **Batch-Wise Dice Loss: Rethinking the Data Imbalance for Medical Image Segmentation**  
Yu-Cheng Chang, Jhih-Yuan Lin, Min-Sheng Wu, [Tung-I Chen](#), Winston H Hsu  
Accepted by Medical Imaging meets NeurIPS, 2019 [\[Paper\]](#)

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### Research Summary

- 2023-2025 **Project: 3D Teleconferencing System**  
(expected) Explore immersive video conferencing systems where remote participants and those in physical attendance can interact face-to-face, fostering natural social interactions
- Develop human avatars that can be created, delivered, and reconstructed with low latency
  - Explore viewport-adaptive streaming for 360° video delivery
  - Enable 8K real-time video streaming using NVIDIA Video Codec SDK
- 2021-2022 **Project: Domain Adaptation and Anomaly Detection in Autonomous Driving**  
Provide autonomous vehicles with the ability to handle the unexpected and be efficiently adapted to new environments
- Reduce the cost of fine-tuning semantic segmentation models by actively selecting the most effective samples

- Develop anomaly-aware semantic segmentation models to enhance safety of autonomous driving

2019-2021 **Project: Few-Shot Learning for Robotic Grasping**

Enable a robotic arm to successfully grasp novel objects using only a small set of samples

- Develop a few-shot object detector that can detect novel instances by searching similar features between the query and sample images
- Explore a framework where an object detector can collaborate with a robotic arm to generate annotated data without human labeling

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## Teaching and Research Experience

UMass CICS Fall **Teaching Assistant - CS578 Distributed Computing and Systems**

2023 Keywords: Consistency and replication, Fault tolerance and consensus, PAXOS, ZAB

National Taiwan **Research Assistant - Communications and Multimedia Lab**

University Keywords: Object Detection, Few-Shot Learning, Domain Adaptation

2021-2022

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## Skills

Programming **Python, C++, MATLAB**

Machine Learning **PyTorch, PyTorch3D, Tensorboard, ONNX**

Tools **AWS, FFmpeg, Docker, Git, NVENC/NVDEC, LaTeX**

Language **Mandarin (Native Speaker), English**

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## References

Ph.D. Advisor **Prof. Ramesh Sitaraman**

Professor, Department of CICS, University of Massachusetts Amherst, MA [\[Webpage\]](#)

Ph.D. Advisor **Prof. Mohammad Hajiesmaili**

Assistant Professor, Department of CICS, University of Massachusetts Amherst, MA [\[Webpage\]](#)

M.S. Advisor **Prof. Winston Hsu**

Professor, Department of Computer Sciences, National Taiwan University, Taiwan [\[Webpage\]](#)

B.S. Mentor **Prof. Yu-Hua Dean Fang**

Associate Professor, Radiology and Neurology, University of Alabama at Birmingham [\[Webpage\]](#)