

Jen-Hao Cheng

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📄 <https://scholar.google.com/citations?user=UrH4PK4AAAAJ>

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2-nd year Ph.D. student at Information Processing Lab,
Department of Electrical & Computer Engineering, University of Washington
Advisor: Dr. Jenq-Neng Hwang
Research Direction: Vision + Language / Computer Vision

Education

- 2023 – Now  **Ph.D. Electrical and Computer Engineering**
University of Washington
- 2021 – 2023  **M.S. Electrical and Computer Engineering**
University of Washington
- 2015 – 2019  **B.S. Electrical Engineering**
National Taiwan University
Advisors: Dr. Lung-Pan Cheng and Dr. Wanjiun Liao

Publication

- 1 H.-I. Liu, C. Wu, **J.-H. Cheng**, W. Chai, S.-Y. Wang, G. Liu, J.-N. Hwang, H.-H. Shuai, and W.-H. Cheng, “Monotakd: Teaching assistant knowledge distillation for monocular 3d object detection,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.
- 2 **J.-H. Cheng**, Y.-H. Ho, S. Y. Kuan, Z. Jiang, W. Chai, H.-W. Huang, J.-N. Hwang, and C.-L. Lin, “Rt-pose: A 4d radar-tensor based 3d human pose estimation and localization benchmark,” in *ECCV*, 2024.
- 3 **J.-H. Cheng**, S.-Y. Kuan, H.-I. Liu, H. Latapie, G. Liu, and J.-N. Hwang, “Centerradarnet: Joint 3d object detection and tracking framework using 4d fmcw radar,” in *2024 IEEE International Conference on Image Processing (ICIP)*, 2024.
- 4 **J.-H. Cheng**, Y. Wang, J.-T. Huang, S.-Y. Kuan, Q. Fu, C. Ni, S. Hao, G. Wang, G. Xing, H. Liu, and J.-N. Hwang, “Vision meets mmwave radar: 3d object perception benchmark for autonomous driving,” in *IEEE Intelligent Vehicles Symposium (IV)*, 2024.
- 5 S. Y. Kuan, **J.-H. Cheng**, H.-W. Huang, W. Chai, C.-Y. Yang, B.-F. Wu, and J.-N. Hwang, “Boosting online 3d multi-object tracking through camera-radar cross check,” in *IEEE Intelligent Vehicles Symposium (IV)*, 2024.
- 6 P. Z. Ramirez, ..., **J.-H. Cheng**, H.-I. Liu, H.-W. Huang, C.-Y. Yang, Z. Jiang, Y.-H. Peng, A. Huang, and J.-N. Hwang, “Ntire 2024 challenge on hr depth from images of specular and transparent surfaces,” in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
- 7 **J.-H. Cheng**, Y. Chen, T.-Y. Chang, H.-E. Lin, P.-Y. C. Wang, and L.-P. Cheng, “Impossible staircase: Vertically real walking in an infinite virtual tower,” in *IEEE Virtual Reality and 3D User Interfaces (VR)*, 2021. [DOI: 10.1109/VR50410.2021.00025](https://doi.org/10.1109/VR50410.2021.00025).
- 8 P.-Y. Wang, C.-H. Xu, P.-Y. Wang, H.-Y. Huang, Y.-W. Chang, **J.-H. Cheng**, Y.-H. Lin, and L.-P. Cheng, “Game illusionization: A workflow for applying optical illusions to video games,” in *ACM Symposium on User Interface Software and Technology (UIST)*, 2021. [DOI: 10.1145/3472749.3474824](https://doi.org/10.1145/3472749.3474824).

- 9 Y.-H. Hsu, **J.-H. Cheng**, K.-Y. Liao, Y.-S. Wang, T.-H. Chen, H.-Y. Chen, C.-K. Yen, and W. Liao, "Ntu smart edge for wireless virtual reality," in *2020 IEEE International Conference on Consumer Electronics - Taiwan (ICCE-Taiwan)*, 2020. [DOI: 10.1109/ICCE-Taiwan49838.2020.9258121](#).
- 10 H.-Y. Huang, C.-W. Ning, P.-Y. Wang, **J.-H. Cheng**, and L.-P. Cheng, "Haptic-go-round: A surrounding platform for encounter-type haptics in virtual reality experiences," in *ACM Conference on Human Factors in Computing Systems (CHI)*, 2020. [DOI: 10.1145/3313831.3376476](#).

Research Experience

Information Processing Lab, University of Washington (Jan. 2022 - Now)

- Multi-modal large-language-model-enabled autonomous driving system
- Human pose estimation using radar and camera
- Vision language model for video understanding
- 3D computer vision and sensor fusion for autonomous driving perception system

Human-Computer Interaction Lab, National Taiwan University (Jul. 2019 - Mar. 2021)

- Virtual Reality (VR) and haptic device research
- Human-computer interaction (HCI) and user interface research

Internet Research Lab, National Taiwan University (Jul. 2018 - Mar. 2020)


- Implemented 5G and Multi-Access Edge Computing (MEC) video streaming applications for mobile VR devices with Unity3D, a 5G base station, and a MEC server

Work Experience

Industry

- 2024 Summer, Fall  Research Intern, Generative AI, Microsoft
Mentors: [Qin Cai](#), [Yi-Ling Chen](#), [Vibhav Vineet](#)

Academic

- 2022 Winter -2024 Spring  Graduate Research Assistant Supported by Cisco
Collaborators: [Hugo Latapie](#), [Gaowen Liu](#)
- Achieved Camera 3D Object Detection state-of-the-art performance (MonoTAKD published in CVPR 2025)
 - State-of-the-art radar 3D object detector (CenterRadarNet published in IEEE ICIP 2024)
 - Novel mulit-modal 3D object detection and tracking framework (published in IEEE IV 2024)
 - Implemented a data collection system consisting of FMCW radar, LiDAR, and stereo camera based on ROS and collected novel real-world perception dataset for autonomous driving (published in IEEE IV 2024)

Work Experience (continued)

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| 2022, 2023, 2024 Fall | ■ Teaching Assistant, Deep Learning for Big Visual Data (Graduate Level) |
| 2023 Winter | ■ Teaching Assistant, Digital Signals And Filtering (Undergraduate Level) |
| 2019 Summer -2021 Spring | ■ Research Assistant, Computer Science at National Taiwan University
Advisor: Lung-Pan Cheng , <ul style="list-style-type: none">• Built novel VR systems: Impossible Staircase published in IEEE VR 2021, Haptic-go-round published in ACM CHI 2020• Achieved novel Multi-person VR experiences by creating cool applications using Unity3D.• Implemented haptic devices with Soc (ESP8266, ESP32)• Conducted Human Computer Interaction research including user interface and user studies |