AN-CHIEH CHENG

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RESEARCH INTERESTS

Topics: *Computer Vision, Robotics, Machine Learning.*
I'm interested in building multimodal foundation models capable of general spatial understanding and actionable intelligence.

EDUCATION

University of California San Diego *Sep 2022 - Present*
Ph.D, Electrical and Computer Engineering Advised by Prof. Xiaolong Wang

National Tsing Hua University *Sep 2018 - March 2021*
Master of Science, Information Systems and Applications Advised by Prof. Min Sun

National Tsing Hua University *Sep 2014 - June 2018*
Bachelor of Science, Computer Science

TECHNICAL REPORTS & PREPRINTS

- Johan Bjorck*, Zhiqi Li*, Yunze Man*, Jing Wang*, An-Chieh Cheng†, Sifei Liu†, Shihao Wang†, Zhiding Yu†, Abhishek Badki, Stan Birchfield, Valts Blukis, Yevgen Chebotar, Siyi Chen, Sicong Leng, Yu-Cheng Chou, Tianli Ding, Boyi Li, Zhengyi Luo, Hang Su, Jonathan Tremblay, Tingwu Wang, Bowen Wen, Jimmy Wu, Xianghui Xie, Hanrong Ye, Hongxu Yin, K.R. Zentner, Liangyan Gui, Yu-Xiong Wang, Yuke Zhu‡, Linxi "Jim" Fan‡, Jan Kautz‡. *Vesta: A Generalist Embodied Reasoning Model.* **NVIDIA Technical Report**, 2026. [Link]

- Cosmos Team. *Cosmos 3: Omnimodal World Models for Physical AI.* **NVIDIA Technical Report**, 2026. [Link]

- Isabella Liu, An-Chieh Cheng, Rui Yan, Geng Chen, Ri-Zhao Qiu, Xueyan Zou, Sha Yi, Hongxu Yin, Xiaolong Wang, Sifei Liu. *Long-Horizon Manipulation via Trace-Conditioned VLA Planning.* **Preprint**, 2026. [Link]

- Yatai Ji, An-Chieh Cheng, Yang Fu, Yukang Chen, Han Zhang, Zhaojing Yang, Wei Huang, Ka Chun Cheung, Song Han, Vidya Nariyambut Murali, Pavlo Molchanov, Jan Kautz, Simon See, Hongxu Yin, Ping Luo, Sifei Liu. *Reinforcing Dual-Path Reasoning in Spatial Vision Language Models.* **Preprint**, 2026. [Link]

PUBLICATIONS

- An-Chieh Cheng, Yang Fu, Yatai Ji, Ligeng Zhu, Guanqi Zhan, Zhuoyang Zhang, Zhaojing Yang, Song Han, Yao Lu, Pavlo Molchanov, Vidya Nariyambut Murali, Jan Kautz, Xiaolong Wang, Hongxu Yin, Sifei Liu. *Grounded 3D-Aware Spatial Vision-Language Modeling.* **CVPR 2026**. [Link]

- An-Chieh Cheng, Yang Fu, Yukang Chen, Zhijian Liu, Xiaolong Li, Subhashree Radhakrishnan, Song Han, Yao Lu, Jan Kautz, Pavlo Molchanov, Hongxu Yin†, Xiaolong Wang†, Sifei Liu†. *3D Aware Region Prompted Vision Language Model.* **ICLR 2026**. [Link]

- Ruihan Yang*, Qinxi Yu*, Yecheng Wu, Rui Yan, Borui Li, An-Chieh Cheng, Xueyan Zou, Yunhao Fang, Xuxin Cheng, Ri-Zhao Qiu, Hongxu Yin, Sifei Liu, Song Han, Yao Lu, Xiaolong Wang. *EgoVLA: Learning Vision-Language-Action Models from Egocentric Human Videos.* **IROS 2026**. [Link]

- Hanrong Ye*, Chao-Han Huck Yang*, Arushi Goel*, Wei Huang*, Zhen Wan*, Jinchuan Tian*, An-Chieh Cheng*, Ligeng Zhu*, Yuanhang Su*, Yuming Lou*, Yong-Xiang Lin*, Dong Yang*, Sreyan Ghosh, Zhijian Liu, Yukang Chen, Ehsan Jahangiri, Ambrish Dantrey, Daguang Xu, Ehsan Hosseini-Asl, Seyed Danial Mohseni Taheri, Vidya Nariyambut Murali, Sifei Liu, Yao Lu, Oluwatobi Olabiyi, Yu-Chiang Frank Wang, Rafael Valle, Bryan Catanzaro, Andrew Tao, Song Han, Jan Kautz, Hongxu Yin, Pavlo Molchanov. *OmniVinci: Enhancing Architecture and Data for Omni-Modal Understanding LLM.* **ICLR 2026**. [Link]

- An-Chieh Cheng*, Yandong Ji*, Zhaojing Yang*, Xueyan Zou, Jan Kautz, Erdem Bıyık, Hongxu Yin†, Sifei Liu†, Xiaolong Wang†. *NaVILA: Legged Robot Vision-Language-Action Model for Navigation.* **RSS** 2025. [Link]

- Zhijian Liu*, Ligeng Zhu*, Baifeng Shi, Zhuoyang Zhang, Yuming Lou, Shang Yang, Haocheng Xi, Shiyi Cao, Yuxian Gu, Dacheng Li, Xiuyu Li, Yunhao Fang, Yukang Chen, Cheng-Yu Hsieh, De-An Huang, An-Chieh Cheng, Vishwesh Nath, Jinyi Hu, Sifei Liu, Ranjay Krishna, Daguang Xu, Xiaolong Wang, Pavlo Molchanov, Jan Kautz, Hongxu Yin†, Song Han†, Yao Lu†. *NVILA: Efficient Frontier Visual Language Models.* **CVPR** 2025. [Link]

- An-Chieh Cheng, Hongxu Yin, Yang Fu, Qiushan Guo, Ruihan Yang, Jan Kautz, Xiaolong Wang, Sifei Liu. *SpatialRGPT: Grounded Spatial Reasoning in Vision-Language Models.* **NeurIPS** 2024. [Link]

- Sifei Liu, Weili Nie, An-Chieh Cheng, Morteza Mardani, Chao Liu, Benjamin Eckart, Arash Vahdat. *Compositional Text-to-Image Generation with Feedforward Layout Generation.* **ECCV Workshop** 2024. [Link]

- An-Chieh Cheng, Xueting Li, Sifei Liu*, Xiaolong Wang*. *TUVF: Learning Generalizable Texture UV Radiance Fields.* **ICLR** 2024. [Link]

- An-Chieh Cheng*, Xueting Li*, Sifei Liu, Min Sun, Ming-Hsuan Yang. *Autoregressive 3D Shape Generation via Canonical Mapping.* **ECCV** 2022. [Link]

- An-Chieh Cheng, Xueting Li, Min Sun, Ming-Hsuan Yang, Sifei Liu. *Learning 3D Dense Correspondence via Canonical Point Autoencoder.* **NeurIPS** 2021. [Link]

- Hung-Jen Chen, An-Chieh Cheng, Da-Cheng Juan, Wei Wei, Min Sun. *Mitigating Forgetting in Online Continual Learning via Instance-aware Parameterization.* **NeurIPS** 2020. [Link]

- An-Chieh Cheng*, Chieh Hubert Lin*, Da-Cheng Juan, Wei Wei, Min Sun. *Instanas: Instance-aware Neural Architecture Search.* **AAAI** 2020. [Link]

- An-Chieh Cheng, Jin-Dong Dong, Chi-Hung Hsu, Shu-Huan Chang, Min Sun, Shih-Chieh Chang, Jia-Yu Pan, Yu-Ting Chen, Wei Wei, Da-Cheng Juan. *Searching Toward Pareto-optimal Device-aware Neural Architectures.* **ICCAD** 2018. [Link]

- Jin-Dong Dong, An-Chieh Cheng, Da-Cheng Juan, Wei Wei, Min Sun. *Dpp-net: Device-aware Progressive Search for Pareto-optimal Neural Architectures.* **ECCV** 2018. [Link]

- Hua-Jun Hong, Pei-Hsuan Tsai, An-Chieh Cheng, Md Yusuf Sarwar Uddin, Nalini Venkatasubramanian, Cheng-Hsin Hsu. *Supporting Internet-of-things Analytics in a Fog Computing Platform.* **CloudCom** 2017. [Link] (Best Paper)

- Pei-Hsuan Tsai, Hua-Jun Hong, An-Chieh Cheng, Cheng-Hsin Hsu. *Distributed Analytics in Fog Computing Platforms using Tensorflow and Kubernetes.* **APNOMS** 2017. [Link]

WORK EXPERIENCE

NVIDIA Inc., *Santa Clara, CA* *June 2025 - Now*
Research Intern Mentor: Sifei Liu, Hongxu Yin

- Multimodal foundation models for spatial understanding and navigation.

Adobe Inc., *San Jose, CA* *June 2023 - Sep 2023*
Research Scientist/Engineer Intern Mentor: Jimei Yang

- Learning generalizable 3D scene representation.

AWARDS AND SCHOLARSHIPS

Qualcomm Innovation Fellowship *2024*
(Financial support for projects that demonstrate significant futuristic, innovative ideas.)

J.Yang Scholarship *2023*
(For outstanding graduate students studying at UCSD.)

Appier Scholarship, *Appier Inc.* *2018, 2020, 2022*
(For outstanding students in their research with top conference papers.)

NovaTek Scholarship, *NovaTek Inc.* *2019*
(Around 12 people granted every year ($< 10\%$).)

INVITED TALKS

Efficient Spatial Reasoning and Long-Horizon Planning *June 2026*
CVPR 2026 Workshop on Efficient Deep Learning for Computer Vision, Denver, CO. [Recording]

Grounding 3D Reasoning and Long-Horizon Actions in VLMs and VLAs *June 2026*
CVPR 2026 Workshop on Foundation Models Meet Embodied Agents, Denver, CO.

SERVICES

Journal Reviewer
IEEE Journal of Selected Topics in Signal Processing, International Journal of Computer Vision, Computer Vision and Image Understanding, Transactions on Visualization and Computer Graphics, Transactions on Pattern Analysis and Machine Intelligence

Conference Reviewer
ICCV (2019, 2021, 2023, 2025), AAAI 2020, CVPR (2020-2023, 2025-2026), ECCV (2020, 2024), ICLR (2022-2026), NeurIPS (2020-2025), WACV (2023-2024), SIGGRAPH 2026

Program Committee
ICLR Workshop on Neural Architecture Search 2020, 2021