Cheng-En Wu

Contact Information

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Research Interests

My research interests lie at the intersection of computer vision and deep learning. I focus on LLM Post-Training, Multimodal Large Language Models (MLLMs), and improving the efficiency of self-supervised learning models in both training and inference.

Employment

Center for Advanced AI, Accenture, Mountain View, CA — Jul. 2025 – Present
Research Scientist
• Developed LLM Post-Training framework for Accenture's AI Refinery platform.
• Working on image and video generation research.

Education

University of Wisconsin-Madison — 2020 – 2025
Ph.D. student in Electrical and Computer Engineering
Advised by Prof. Pedro Morgado and Prof. Yu Hen Hu

National Tsing Hua University — 2014 – 2016
M.S. in Computer Science
Advised by Prof. Jia-Shung Wang

National Taiwan University of Science and Technology — 2009 – 2012
B.S. in Electrical and Computer Engineering

Work Experience

Microsoft, Redmond, WA — Feb. 2024 – Dec. 2024
Research Intern
Mentors: Yunsheng Li, Weijian Xu, Mengchen Liu
• Designed a post-training pipeline to enhance the performance of Code Large Language Models (Code LLMs).
• Developed a Referring Expression Comprehension (REC) dataset to improve zero-shot performance on RefCOCO datasets.

TikTok, San Jose, CA — Jun. 2022 – Sep. 2022
Research Intern
Mentors: Yu Tian, Linjie Yang, Haichao Yu, Heng Wang
• Studied an unsupervised prompt tuning method for vision-language pre-trained models, improving adaptation to downstream tasks. (ICCV'23)

University of Wisconsin-Madison, Madison, WI — Sep. 2022 – Jul. 2025
Research Assistant
Advisors: Prof. Pedro Morgado and Prof. Yu Hen Hu
• Proposed a prototype-driven curriculum learning approach for Masked Image Modeling (MIM) to address early-stage optimization challenges in self-supervised visual learning. (CVPR'25)
• Developed acceleration methods for Vision Transformer (ViT) contrastive learning, reducing computational costs through sequence compression strategies while maintaining performance. (NeurIPS'24)
• Proposed a token pruning framework for Vision-language Pre-trained Models (WACV'25)
• Proposed block pruning techniques to enhance the efficiency of Convolutional Neural Networks.

NEC Labs America, Princeton, NJ — May 2021 – Aug. 2021
Research Intern
Mentors: Farlay Lai, Asim Kadav
• Proposed a self-supervised video representation learning framework using cascade positive retrieval to enhance contrastive learning and reduce reliance on labeled data. (CVPRW'22)

Academia Sinica, Taipei, Taiwan 2018 – 2020
Research Assistant
Advisor: Prof. Chu-Song Chen
• Developed continual learning methods for CNNs using model compression, critical weight selection, and progressive expansion to mitigate catastrophic forgetting. (NeurIPS'19)
• Designed efficient deep learning architectures for visual recognition tasks. (MMSP'19)

MediaTek, Hsinchu, Taiwan 2017 – 2018
Software Engineer
Improved the computational efficiency of neural networks on mobile devices and developed mobile GPU drivers to boost run-time of applications using neural networks.

Realtek, Hsinchu, Taiwan 2016 – 2017
Software Engineer
Developed H.264 encoder drivers for TV SOCs.

Publications

MCP-Bench: Benchmarking Tool-Using LLM Agents with Complex Real-World Tasks via MCP Servers
arXiv 2025
Zhenting Wang, Qi Chang, Hemani Patel, Shashank Biju, ***Cheng-En Wu***, Quan Liu, Aolin Ding, Alireza Rezazadeh, Ankit Shah, Yujia Bao, Eugene Siow

Scaling Up Audio-Synchronized Visual Animation: An Efficient Training Paradigm
arXiv 2025
Lin Zhang, Zefan Cai, Yufan Zhou, Shentong Mo, Jinhong Lin, ***Cheng-En Wu***, Yibing Wei, Yijing Zhang, Ruiyi Zhang, Wen Xiao, Tong Sun, Junjie Hu, Pedro Morgado

TrackVerse: A Large-Scale Object-Centric Video Dataset for Image-Level Representation Learning
International Conference on Computer Vision (ICCV) 2025
Yibing Wei, Samuel Church, Victor Suciu, Jinhong Lin, ***Cheng-En Wu***, Pedro Morgado

From Prototypes to General Distributions: An Efficient Curriculum for Masked Image Modeling
Conference on Computer Vision and Pattern Recognition (CVPR) 2025
Jinhong Lin*, ***Cheng-En Wu****, Huanran Li, Jifan Zhang, Yu Hen Hu, Pedro Morgado (*equal contribution)

Patch Ranking: Efficient CLIP by Learning to Rank Local Patches
Winter Conference on Applications of Computer Vision (WACV) 2025
Cheng-En Wu, Jinhong Lin, Yu Hen Hu, Pedro Morgado

Accelerating Augmentation Invariance Pretraining
Conference on Neural Information Processing Systems (NeurIPS) 2024
Jinhong Lin*, ***Cheng-En Wu****, Yibing Wei, Pedro Morgado (*equal contribution)

Why Is Prompt Tuning for Vision-Language Models Robust to Noisy Labels?
International Conference on Computer Vision (ICCV) 2023
Cheng-En Wu, Yu Tian, Haichao Yu, Heng Wang, Pedro Morgado, Yu Hen Hu, Linjie Yang

Block Pruning for Enhanced Efficiency in Convolutional Neural Networks
arXiv preprint 2023
Cheng-En Wu, Azadeh Davoodi, Yu Hen Hu

Self-supervised Video Representation Learning with Cascade Positive Retrieval
L3D-IVU Workshop at Conference on Computer Vision and Pattern Recognition (CVPR) 2022
Cheng-En Wu, Farley Lai, Yu Hen Hu, Asim Kadav

Merging Well-Trained Deep CNN Models for Efficient Inference
Conference on Asia Pacific Signal and Information Processing Association (APSIPA) 2020
Cheng-En Wu, Jia-Hong Lee, Timmy ST Wan, Yi-Ming Chan, Chu-Song Chen

Extending Conditional Convolution Structures For Enhancing Multitasking Continual Learning
Conference on Asia Pacific Signal and Information Processing Association (APSIPA) 2020
Cheng-Hao Tu* ***Cheng-En Wu****, Chu-Song Chen (*equal contribution)

Compacting, Picking and Growing for Unforgetting Continual Learning
Conference on Neural Information Processing Systems (NeurIPS) 2019
Steven Hung, Cheng-Hao Tu, ***Cheng-En Wu***, Chien-Hung Chen, Yi-Ming Chan, Chu-Song Chen

IMMVP: An Efficient Daytime and NighttimeOn-Road Object Detector
IEEE International Workshop on Multimedia Signal Processing (MMSP) 2019
Cheng-En Wu, Yi-Ming Chan, Chien-Hung Chen, Wen-Cheng Chen, Chu-Song Chen

On Merging MobileNets for Efficient Multitask Inference
EMC^2 Workshop at IEEE Symposium on High Performance Computer Architecture (HPCA) 2019
Cheng-En Wu, Yi-Ming Chan, Chu-Song Chen

Traffic pattern modeling, trajectory classification and vehicle tracking within urban intersections
IEEE International Smart Cities Conference (ISC2) 2017
Cheng-En Wu, Wen-Yen Yang, Hai-Che Ting, Jia-Shung Wang