

# Bor-Shiun Wang

PHD CANDIDATE · COMPUTER SCIENCE AND ENGINEERING

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## Summary

I am currently pursuing a PhD at the Institute of Computer Science and Engineering, National Yang Ming Chiao Tung University, with a research focus on explainable AI. My interests lie in exploring cutting-edge AI technologies and applying explainable AI in various domains. I'm also keen to study the various subfields of AI that are currently trending.

## Education

### National Yang Ming Chiao Tung University (NYCU)

PH.D. IN INSTITUTE OF COMPUTER SCIENCE AND ENGINEERING

Hsinchu, Taiwan

Feb. 2022 - Present

- Focusing on explainable AI, interpretable AI.
- Published one paper, MCPNet, in CVPR 2024.
- Published one paper, PRB-FPN+, in CVPR Workshop 2023.

### National Chiao Tung University (NCTU)

M.S. IN INSTITUTE OF INTELLIGENT SYSTEMS (GPA: 4.23 / 4.30)

Hsinchu, Taiwan

Feb. 2020 - Jan. 2022

- Focusing on computer vision and machine learning.
- Published one paper, COFENet, in ICIP 2022.
- Published one paper, LDW-Pooling, in BMVC 2021.

## Publications

- **Bor-Shiun Wang**, Chien-Yi Wang\*, Wei-Chen Chiu\*, “Uncovering the Why: Interpretable CLIP Similarity via Dual Modalities Decomposition”, Under Peer Review, 2026.
- **Bor-Shiun Wang**, Chien-Yi Wang\*, Wei-Chen Chiu\*, “MCPNet++: An Interpretable Classifier via Multi-Level Concept Prototypes”, Under Peer Review, 2026.
- **Bor-Shiun Wang**, Chien-Yi Wang\*, Wei-Chen Chiu\*, “MCPNet: An Interpretable Classifier via Multi-Level Concept Prototypes”, In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
- **Bor-Shiun Wang\***, Ping-Yang Chen\*, Yi-Kuan Hsieh, Jun-Wei Hsieh, Ming-Ching Chang, JiaXin He, Shin-You Teng, HaoYuan Yue, Yu-Chee Tseng, “PRB-FPN+: Video Analytics for Enforcing Motorcycle Helmet Laws”, In IEEE Conference on Computer Vision and Pattern Recognition Workshop (CVPRW) on the AI City Challenge, 2023.
- **Bor-Shiun Wang**, Jun-Wei Hsieh, Yi-Kuan Hsieh, Ping-Yang Chen, “COFENet: Co-Feature Neural Network Model for Fine-Grained Image Classification”, In IEEE International Conference on Image Processing (ICIP), 2022.
- **Bor-Shiun Wang**, Jun-Wei Hsieh, Ping-Yang Chen, Ming-Ching Chang, Lipeng Ke, Siwei Lyu, “LDW-Pooling: Learnable Discrete Wavelet Pooling for Convolutional Networks”, The British Machine Vision Conference (BMVC), 2021.

## Projects

### Cassava Leaf Disease Classification

Nov. 2020 - Feb. 2021

- **A challenging task** in fine-grained classification, identifying Cassava Leaf Disease, requires the model to distinguish between subtle morphological symptoms across highly similar categories.
- **Soft-label technique** relaxes the rigid constraints of one-hot encoding by encoding rich inter-class relationships and semantic similarities within the label space.
- **Mix-up augmentation** to increase the variation of the samples and generate the ground truth with the soft-label technique to enhance the discriminative ability of learned features.
- **Achieves 0.8957** on the public score, approximately **improving 4.5%** compared to the baseline.

### College/University Student Research Application

Jul. 2019 - Feb. 2020

- **Developed COFENet**, a novel deep learning architecture designed for fine-grained texture-based classification in images with high intra-class and low inter-class variation.
- **Proposed a spatial-structural relation module** that captures pairwise, orientation-wise, and distance-wise relationships between feature channels, surpassing traditional concatenation methods.
- **Addressed classification challenges** for small, blurry, and textured objects by integrating relative spatial layouts into end-to-end feature learning.
- **Published paper** to ICIP.

# Scholarship

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## Subsidy for Domestic Graduate Students to Attend International Academic Conferences

Taiwan

NATIONAL SCIENCE AND TECHNOLOGY COUNCIL (NSTC)

2024

- Awarded for presenting the paper "MCPNet" at the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2024) in Seattle, USA.

## Technical Skills

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**Programming** C/C++, Python, HTML/CSS, SQL

**AI/ML** OpenAI API, LLMs, MLLMs, Pytorch, Hugging Face, Scikit Learn, NumPy, Computer Vision

**Cloud/DevOps** Git/Github, Docker

## Reviewer Services

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- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Learning Representations (ICLR)
- Neural Information Processing Systems (NeurIPS)
- IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)