Jia-Fong Yeh

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Policy Learning, Deep Robotics, Machine Learning

Education

National Taiwan University (NTU) *Taipei, Taiwan*

PH.D. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING *Sept. 2019 – May 2025*

- GPA: 4.21/4.3
- Advisor: Prof. Winston H. Hsu

National Taiwan Normal University (NTNU) *Taipei, Taiwan*

B.S. & M.S. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING *Sept. 2013 – June 2019*

- GPA: 3.74/4.3 & 4.3/4.3
- Advisor: Prof. Tsung-Che Chiang and Prof. Shun-Shii Lin

Selected Research Projects

My research focuses on advancing policy learning, addressing three major challenges: (1) the complexity of the environment, (2) the lack of reward signals, and (3) the safety concerns on policy's behavior, as described below:

Learning Multi-stage Manipulation Tasks from Few Demonstrations | AAAI 2022

- Introduced an attention-based policy that learns from demonstrations on complex tasks
- Outperformed all baselines in 6 out of 8 cases, with interpretable visualization results

Vision-Instruction Correlation Reward Generation | ICLR 2025

- Developed a hierarchical reward model using both LLM and VLM techniques
- Demonstrated a 43% improvement over the strongest baseline in long-horizon tasks

Monitoring Policy's Behaviors in Unseen Environments | NeurIPS 2024

- Proposed novel contrastive losses to enhance monitoring for detecting erroneous actions
- Achieved the best results in 17 out of 21 cases, with extensive ablations and visualizations

Experiences & Services

ML Research Intern, Sony Group Corporation *Tokyo, Japan*

- Mentor: Dr. Wang Zhao and Mr. Shingo Takamatsu *Oct. 2023 – Mar. 2024*
- Topic: *Reinforcement Learning with LLM/VLM guidance*

Reviewers

- CVPR, NeurIPS, ICML, ICLR, ICCV, AAAI, WACV, ICASSP, ICDL, ICMLW, CVPRW
- *Outstanding Reviewers*: CVPR'25

Skills & Course Projects

- **Programming Languages** – C/C++ 、 Python 、 C# (Basic)
- **ML Packages** – PyTorch 、 TensorFlow (Intermediate) 、 Weights & Biases 、 scikit-learn
- **ML Infrastructure-related** – AWS EC2 and EBS storage 、 PyTorch DDP 、 Git (version control)
- **Robot Simulation** – Pybullet 、 Isaac Sim 、 Coppeliasim
- **Course Projects** – Ray Tracing 、 WebGL [code][demo] 、 Dark Chess AI 、 JPEG Decoder 、 SQL-based Website 、 Snake Game AI
- **Others** – HTML 、 CSS 、 mysql (Basic) 、 OpenMP (Intermediate)

Selected Awards

2025 **| Hon Hai Technology Award** [link]

2025 **| NTUEE-1975 Technology Research Innovation Award** [link]

2024 **| NeurIPS Scholar Award**

2022 **| NOVATEK PhD Scholarship** [link]

2019 **| ORSTW Master Thesis Award** - Honorable mention [link]

2018 **| ITSA Annual Collegiate Programming Contest** - Honorable mention [link]

2016-2022 **| Computer Chess Competition** - 16 medals in Surakarta and Breakthrough chess

First-author Projects | citations: 400+ | h-index: 7 | i-10 index: 6

- VICtoR: Learning Hierarchical Vision-Instruction Correlation Rewards for Long-horizon Manipulation
  ICLR 2025 | co-first work | AR: 32.08% | **[PDF]**
- AED: Adaptable Error Detection for Few-shot Imitation Policy
  NeurIPS 2024 | AR: 25.8% | **[PDF]**
- Shared-unique Features and Task-aware Prioritized Sampling on Multi-task Reinforcement Learning
  arXiv 2024 | co-first work | **[PDF]**
- Stage Conscious Attention Network (SCAN): A Demonstration-conditioned Policy for Few-shot Imitation
  AAAI 2022 | co-first work | AR: 15% | **[PDF]**
- Large Margin Mechanism and Pseudo Query Set on Cross-Domain Few-Shot Learning
  CVPRW Report 2020 | citation: 20+ | **[PDF]**
- Modified L-SHADE for Single Objective Real-Parameter Optimization
  CEC 2019 | citation: 20+ | **[PDF]**
- Snake Game AI: Movement Rating Functions and Evolutionary Algorithm-based Optimization
  TAAI 2016 | **[PDF]**

I also have publications in *IEEE TMM*, *IEEE TAI*, *ICCV, CoRL*, *ICRA*, *ICASSP*, *BMVC*, *ICIP*, *ECCVW*, and *NeurIPSW*, please find them from my **Google Scholar**.