Kuang-Da Wang

linkedin.com/in/MaxGdwang github.com/KuangDW gdwang.cs12@nycu.edu.tw dblp.org/pid/334/0632.html

Education

National Yang Ming Chiao Tung University, ADSL and RL & Bandits Lab (REAL) Hsinchu, Taiwan

Ph.D. candidate in Computer Science and Engineering (Advisor: Wen-Chih Peng and Ping-Chun Hsieh) Sep 2023 - Now

- Research topics: Sport Data Science, Imitation Learning , Reinforcement Learning and LLM Alignment
- CGPA: 3.83/4.00, 10+ publications

National Yang Ming Chiao Tung University, Advanced Database System Laboratory (ADSL) Hsinchu, Taiwan

M.S. in Networking Engineering (Advisor: Wen-Chih Peng) Sep 2021 - Aug 2023

- CGPA: 3.90/4.00, 1 Academic Excellence Award, 2 publications

National Cheng Kung University Tainan, Taiwan

B.S. in Engineering Science Sep 2018 - Jun 2021

- CGPA: 3.89/4.00, 3 Academic Excellence Award, 1 project competition award

Experience

Research Intern, Sony Group Corporation, Aug 2025 - Feb 2026 Tokyo, Japan

Multi-Modal LLM Agent / Multi-Agent System for Digital Design

- Designed and implemented WebGen-V, a multimodal benchmark and agentic framework for instruction-to-HTML generation for layout–content–visual alignment
- Investigated automatic prompt optimization and design reasoning mechanisms, enabling adaptive task orchestration among agents for end-to-end design generation aligned with business objectives.

PhD Researcher, ADSL and REAL, Sep 2023 - Now Hsinchu, Taiwan

Reinforcement Learning/Imitation Learning/LLM Alignment

- Research on reinforcement learning, imitation learning, LLMs alignment, and sport strategies simulation.
- Collaborate with undergraduate and master's students on applied machine learning research.

AI Intern, Taiwan Semiconductor Manufacturing Company (TSMC), Jun 2023 - Dec 2024 Hsinchu, Taiwan

Document Intelligence/Multi-Agent LLM Framework/Information Retrieval

- A comparative analysis of agentic and decomposed information retrieval methods for financial report generation.
- Develop applications for tabular information extraction from image-based financial documents.

Projects

Test-Time LLM Preference Alignment, Jun 2024 - Present

Preference Alignment/Reinforcement Learning

- Proposed a novel test-time alignment framework that treats LLM alignment as sequential decision-making, balancing the curse of horizon (token-level) and curse of dimensionality (response-level).
- Introduced Hindsight Subgoal Identification and Subgoal-Conditioned Re-Generation to enable hierarchical planning in text generation, ensuring stable improvement without finetuning.

- Demonstrated consistent performance gains across discourse-level translation, long-form QA, and program synthesis, outperforming standard finetuning-based alignment methods with only test-time adaptation.
- Work in Progress: Self-Improving In-Context Learning for Test-Time Preference Alignment in Reasoning Task.

Badminton Players' Strategies Simulation and Enhancement, Precision Sport Science Feb 2022 - Present

Deep learning/Reinforcement Learning/Imitation Learning

- Build virtual badminton players through deep imitation learning for match simulation and Introduce intent interpretation modules to help coaches and players understand how to improve tactics.
- Develop a realistic badminton environment with lifelike opponents and physics simulation for quick strategy validation and advanced tactical assessment.
- Build LLM-based badminton agents and explore language-based strategy simulations .

Selected Publications

Kuang-Da Wang, Zhao Wang, Yotaro Shimose, Wei-Yao Wang, Shingo Takamatsu, "**WebGen-V Bench: Structured Representation for Enhancing Visual Design in LLM-based Web Generation and Evaluation**", WWW 2026 (under review) [paper] (Work done as an intern at Sony Group Corporation)

Kuang-Da Wang, Teng-Ruei Chen, Yu Heng Hung, Guo-Xun Ko, Shuoyang Ding, Yueh-Hua Wu, Yu-Chiang Frank Wang, Chao-Han Huck Yang, Wen-Chih Peng, Ping-Chun Hsieh, "**Test-Time Alignment for Large Language Models via Textual Model Predictive Control**", ICLR 2026 (under review) [paper, GitHub]

Brian Yan, Shuoyang Ding, **Kuang-Da Wang**, Siqi Ouyang, Oleksii Hrinchuk, Vitaly Lavrukhin, Boris Ginsburg, "**NVIDIA-NeMo's WMT 2025 Metrics Shared Task Submission**", WMT 2025 [paper]

Kuang-Da Wang, Shuoyang Ding, Chao-Han Huck Yang, Ping-Chun Hsieh, Wen-Chih Peng, Vitaly Lavrukhin, Boris Ginsburg "**Extending Automatic Machine Translation Evaluation to Book-Length Documents**", EMNLP Main 2025 [paper, GitHub] (This work was conducted in collaboration with NVIDIA)

Yong-En Tian, Yu-Chien Tang, **Kuang-Da Wang**, An-Zi Yen and Wen-Chih Peng, "**Template-Based Financial Report Generation in Agentic and Decomposed Information Retrieval**", SIGIR 2025 Short Paper [paper, GitHub]

Peng, Wen-Chih; **Wang, Kuang-Da**; Xie, Bo-Zhou; Chen, Yu-An; Tsai, Cheng-Shiuan; Doong, Shao-Jyun; Hung, Jun-Chen, "**CoachAI+ Badminton Environment: Realistic Badminton Game Simulator for Enhancing Player Performance**", The MIT Sloan Sports Analytics Conference 2025 Research Papers [paper, GitHub, presentation video].

Hong-Wei Wu, Wei-Yao Wang, **Kuang-Da Wang**, Wen-Chih Peng, "**Capturing Sample-Wise Interactions in Tabular Regression via Arithmetic-Aware Pre-Training and Adaptive-Regularized Fine-Tuning**", AAAI 2025 [paper].

Bing-Zhi Ke, **Kuang-Da Wang**, Wen-Chih Peng , "**A Representation-Guided Diffusion Model Framework for Strategic Planning in Badminton**", AAMAS 2025 Extended Abstract [paper].

Kuang-Da Wang, Wei-Yao Wang, Ping-Chun Hsieh, Wen-Chih Peng, "**Offline Imitation of Badminton Player Behavior via Experiential Contexts and Brownian Motion**", ECML-PKDD 2024 [paper].

Kuang-Da Wang, Yu-Tse Chen, Yu-Heng Lin, Wei-Yao Wang, Wen-Chih Peng, "**Bridging the Gap between a Reinforcement Learning Environment and Real-World Badminton Games**", AAAI 2024 [paper].

Kuang-Da Wang, "**Enhancing Badminton Player Performance via a Closed-Loop AI Approach: Imitation, Simulation, Optimization, and Execution**" CIKM 2023 [paper].

Awards

[Nov. 2023] Master Thesis Award, Taiwanese Association for Artificial Intelligence

[Sep. 2023] Outstanding Doctoral Student Scholarship, Ministry of Science and Technology

Academic Services

Conference Program Committee ECML-PKDD 2024, KDD 2025, WWW 2026

Student Volunteer AAAI 2024, AAAI 2025