Chang-Wei Yueh

Taipei, Taiwan

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RESEARCH INTERESTS

Theory of machine learning and control, especially for online decision-making and optimization

EDUCATION

University of Southern California **08 2024 - present**
Ph.D. in Electrical Engineering *Los Angeles, CA*

National Taiwan University (NTU) **09 2019 - 01 2024**
B.S. in Electrical Engineering and Mathematics *Taipei, Taiwan*
GPA - **4.0/4.3 (3.85/4.0)**

RESEARCH EXPERIENCES

Dept. of EE, National Taiwan University **04 2022 - 10 2022**
Undergraduate Researcher (advisor: Prof. Pei-Yuan Wu) *Taipei, Taiwan*

- Focused on the sample complexity of kernel-based Q-learning
- Proposed a new sample process with the access of a generative model
- Derived a near-optimal sample complexity upper bound with possibly infinite state-action space

Institute of Information Science, Academia Sinica **01 2023 - Present**
Research Assistant (advisor: Dr. Wen-Liang Hwang) *Taipei, Taiwan*

- Proposed a novel efficient proximal-based method for non-smooth convex optimization
- Reduce the original minimization at each iteration to an one-dimensional search problem
- Speed up 30% compared to proximal point method while maintaining the same convergence error

Dept. of ESE, Washington University in St. Louis **06 2023 - 08 2023**
Summer Student Intern (advisor: Prof. Jr-Shin Li) *St. Louis, MO*

- Adapted Q-learning algorithm to fit in ensemble control systems
- Tested the possibility of solving traditional control problems by data-driven approaches
- Achieved a control by a model-free procedure

PUBLICATIONS

Conference Papers

[1] Sing-Yuan Yeh, Fu-Chieh Chang, **Chang-Wei Yueh**, Pei-Yuan Wu, Alberto Bernacchia, and Sattar Vakili. Sample complexity of kernel-based q-learning. In Proceedings of The 26th International Conference on Artificial Intelligence and Statistics. PMLR, 2023

Preprints

[1] Wen-Liang Hwang and **Chang-Wei Yueh**. Directional proximal point method for convex optimization, 2023

HONORS AND AWARDS

USC Taiwan Global Fellowship **09 2023 - 06 2027**

TECHNICAL SKILLS

Programming Languages: Python, C, C++, MATLAB

Toolkits: NumPy, Pandas, Scikit-Learn, PyTorch, Git, CVX