ZHANG-WEI HONG

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EDUCATION

Massachusetts Institute of Technology *start 2020 - present*
Ph.D. in Electrical Engineering and Computer Science, Advised by *Prof. Pulkit Agrawal*

National Tsing Hua University *start 2017 - end 2018*
Master in Computer Science, Advised by *Prof. Chun-Yi Lee*

National Tsing Hua University *start 2014 - end 2017*
Bachelor in Computer Science

PUBLICATIONS

Sathwik Karnik*, **Zhang-Wei Hong***, Nishant Abhangi*, Yen-Chen Lin, Tsun-Hsuan Wang, Pulkit Agrawal, **Red Teaming Language-Conditioned Robot Models via Vision Language Models**, Accepted at NeurIPS Safe Generative AI Workshop 2024 (* denotes co-first author)

Chi-Chang Lee*, Zhang-Wei Hong*, Pulkit Agrawal, **Going Beyond Heuristics by Imposing Policy Improvement as a Constraint**, Accepted at NeurIPS 2024 (* denotes co-first author)

Srinath Mahankali, Zhang-Wei Hong, Ayush Sekhari, Alexander Rakhlin, Pulkit Agrawal, **Random Latent Exploration for Deep Reinforcement Learning**, Accepted at ICML 2024

Zhang-Wei Hong, Idan Shenfeld, Tsun-Hsuan Wang, Yung-Sung Chuang, Aldo Pareja, James R. Glass, Akash Srivastava, Pulkit Agrawal, **Curiosity-driven Red-teaming for Large Language Models**, Accepted at ICLR 2024

Srinath Mahankali*, Chi-Chang Lee*, Gabriel Margolis, Zhang-Wei Hong, Pulkit Agrawal, **Maximizing Quadruped Velocity by Minimizing Energy Models**, Accepted at ICRA 2024 (* denotes co-first author)

Zhang-Wei Hong, Aviral Kumar, Sathwik Karnik, Abhishek Bhandwaldar, Akash Srivastava, Joni Pajarinen, Romain Laroche, Abhishek Gupta, and Pulkit Agrawal, **Beyond Uniform Sampling: Offline Reinforcement Learning with Imbalanced Datasets**, Accepted at *Conference on Neural Information Processing Systems (NeurIPS) 2023*

Idan Shenfeld, Zhang-Wei Hong, Aviv Tamar, and Pulkit Agrawal, **TGRL: Teacher-guided Reinforcement Learning for POMDP**, Accepted at *International Conference on Machine Learning (ICML) 2023*

Zechu Li, Tao Chen, Zhang-Wei Hong, Anurag Ajay, and Pulkit Agrawal, **Parallel Q-Learning: a Scheme for Time-efficient Reinforcement Learning**, Accepted at *International Conference on Machine Learning (ICML) 2023*

Zhang-Wei Hong, Pulkit Agrawal, Remi Tachet des Combes, and Romain Laroche, **Harnessing Mixed Offline Reinforcement Learning Datasets via Trajectory Reweighting**, Accepted at *International Conference on Learning Representation (ICLR) 2023*

Kwangjun Ahn, Zakaria Mhammedi, Horia Mania, Zhang-Wei Hong, and Ali Jadbabaie. **Model Predictive Control via On-Policy Imitation Learning**, Accepted as an oral presentation at *Learning for Decision Making and Control (L4DC) 2023*

Eric Chen*, Zhang-Wei Hong*, Joni Pajarinen, and Pulkit Agrawal. **Redeeming Intrinsic Rewards via Constrained Policy Optimization**, Accepted at *Conference on Neural Information Processing Systems (NeurIPS) 2022 (* denotes co-first author)*

Haokuan Luo, Albert Yue, Zhang-Wei Hong, Pulkit Agrawal. **Stubborn: A Strong Baseline for Indoor Object Navigation**, Accepted at *International Conference on Intelligent Robots and Systems (IROS) 2022*

Zhang-Wei Hong*, Ge Yang*, and Pulkit Agrawal. **Bilinear Value Networks for Multi-goal Reinforcement Learning**, Accepted at *International Conference on Learning Representation (ICLR) 2022 (* denotes co-first author)*

Zhang-Wei Hong, Tao Chen, Yen-Chen Lin, Joni Pajarinen, and Pulkit Agrawal. **Topological Experience Replay**, Accepted at *International Conference on Learning Representation (ICLR) 2022*

Chin-Jui Chang, Yu-Wei Chu, Chao-Hsien Ting, Hao-Kang Liu, Zhang-Wei Hong, and Chun-Yi Lee, **Reducing the Deployment-Time Inference Control Costs of Deep Reinforcement Learning Agents via an Asymmetric Architecture**, Accepted by *International Conference on Robotics and Automation (ICRA) 2021*

Zhang-Wei Hong, Prabhat Nagarajan, and Guilherme Maeda, **Periodic Intra-Ensemble Knowledge Distillation for Reinforcement Learning**, Accepted by *European Conference on Machine Learning (ECML) 2021* and *Deep Reinforcement Learning Workshop at Conference on Neural Information Processing Systems (NeurIPS) 2019*

Zhang-Wei Hong, Tsu-Jui Fu, Tzu-Yun Shann, Yi-Hsiang Chang, and Chun-Yi Lee. **Adversarial Active Exploration Strategy for Inverse Dynamics Model Learning**, Accepted as an oral paper by *Conference on Robot Learning (CoRL) 2019*

Zhang-Wei Hong, Tzu-Yun Shann, Shih-Yang Su, Yi-Hsiang Chang, Tsu-Jui Fu, and Chun-Yi Lee. **Diversity-driven Exploration Strategy for Deep Reinforcement Learning**, Accepted as a poster paper by *Conference on Neural Information Processing Systems (NeurIPS) 2018*

Zhang-Wei Hong, Chen Yu-Ming, Shih-Yang Su, Tzu-Yun Shann, Yi-Hsiang Chang, Hsuan-Kung Yang, Brian Hsi-Lin Ho, Chih-Chieh Tu, Yueh-Chuan Chang, Tsu-Ching Hsiao, Hsin-Wei Hsiao, Sih-Pin Lai, and Chun-Yi Lee **Virtual-to-Real: Learning to Control in Visual Semantic Segmentation**, Accepted as an oral paper by *International Joint Conferences on Artificial Intelligence (IJCAI) 2018*

Zhang-Wei Hong*, Shih-Yang Su*, Tzu-Yun Shann*, Yi-Hsiang Chang, and Chun-Yi Lee. **Deep Policy Inference Q-Network for Multi-Agent Systems**, Accepted as an oral paper by *International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2018*

Yen-Chen Lin, Zhang-Wei Hong, Yuan-Hong Liao, Meng-Li Shih, Ming-Yu Liu, and Min Sun. **Tactics of adversarial attack on deep reinforcement learning agents**, Accepted as an oral paper by *International Joint Conferences on Artificial Intelligence (IJCAI) 2017*

EXPERIENCE

Research intern, MIT-IBM Research, Cambridge, MA, US	*2023 Jun. - 2023 Sep.*
Remote research intern, Microsoft Research, Montreal, Canada	*2022 Jun.* - 2022 Aug.
Graduate researcher / Graduate research assistant, MIT, Cambridge	*2020 Sep. - Present*
Full-time research assistant, National Tsing Hua University, Taiwan	*2019 Oct. - 2020 Mar.*
Research intern, Preferred Networks, Japan	*2019 Jun. - 2019 Sep.*
Engineering intern, Appier, Taiwan	*2019 Feb. - 2019 Jun.*

Visiting researcher, Advised by *Prof. Jan Peters*, TU Darmstadt, Germany *2018 Jul. - 2018 Sep.*

Graduate research assistant, National Tsing Hua University, Taiwan *2016 Oct. - 2019 Jan.*

Engineering intern, Mediatek, Taiwan *2016 Jul. - 2016 Sep.*

Contract engineer, Industrial Technology Research Institute, Taiwan *2015 Oct. - 2015 Dec.*

TEACHING

6.484 - Computational Sensorimotor Learning, MIT, U.S. *2022 Feb. - 2022 May.*
Textbook drafting

6.S090 - Deep Learning for Control, MIT, U.S. *2021 Jan.*
Lectures of off-policy reinforcement learning

Nvidia deep learning institute, Nvidia, Taiwan *2017 Jul. - 2017 Oct.*
Hands-on image recognition

SERVICE

International Conference on Learning Representation (ICLR), *Reviewer*
International Conference on Machine Learning (ICML), *Reviewer*
Conference on Robot Learning (CoRL), *Reviewer*
Conference on Neural Information Processing Systems (NeurIPS), *Reviewer*
International Conference on Intelligent Robots and Systems (IROS) , *Reviewer*
Advanced Robotics Journal, *Reviewer*
Goal-conditioned RL (GCRL) workshop, NeurIPS, *Reviewer*
Foundational Models for Decision Making (FMDM) workshop, NeurIPS, *Reviewer*
Deep RL workshop, NeurIPS, *Program Committee*

PROJECTS

Nvidia Embedded Intelligent Robot Challenge *2016 Jun. - 2016 Sep.*
Develop an intelligent robot using Nvidia Jetson TX1 to solve three tasks: (i) autonomous driving, (ii) object pick-and-place, and (iii) image recognition.

AWARDS AND SCHOLARSHIPS

Qualcomm Innovation Fellowship[1]
Qualcomm, US 2024

DAAD & MOST Summer Institute Program Fellowship
Ministry of Science and Technology and Deutscher Akademischer Austausch Dienst *2019*

Nvidia Jetson Developer Challenge – World champion [2][3]
Nvidia *2018*

Nvidia Embedded Intelligent Robotics Challenge - 1st prize
Nvidia *2017*

SKILLS

Programming Languages and Frameworks
- C/C++/C#/Python/Java
- Message Passing Interface (MPI)/CUDA/OpenGL/Robot Operating System(ROS)

[1] https://www.qualcomm.com/research/university-relations/innovation-fellowship/2024-north-america
[2] https://challengerocket.com/nvidia/works/Sim-to-Real-Autonomous-Robotic-Control-adff14
[3] https://insidebigdata.com/2018/04/10/winners-nvidiar-jetson-developer-challenge/

- Tensorflow/PyTorch/Chainer

Languages

- Mandarin (Chinese)
- English