

Ying Wen / 温颖

Curriculum Vitae

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Google Scholar



Research Interests: Multi-Agent Reinforcement Learning, Machine Learning Systems.

Professional Experience

- Sept 2020 - **Shanghai Jiao Tong University, John Center, Assistant Professor.**
Shanghai, CN Reinforcement Learning, Multi-Agent Systems, Game Theory, Machine Learning Systems.
- Sept 2019 - **Huawei Tech. R&D UK, Research Intern.**
Aug 2020 Multi-agent reinforcement learning algorithms and applications.
London, UK Best Intern Award.
- Apr 2016 - **MediaGamma, Research Intern.**
Sept 2019 Real-time decision making optimization and large-scale user response prediction systems using deep learning
London, UK and reinforcement learning models.

Education

- 2016 – 2020 **University College London, PhD**, in Computer Science.
London, UK *Thesis:* Modelling Mutual Influence in Multi-Agent Reinforcement Learning.
Supervisor: Prof. Jun Wang.
Award: Feldman Scholarship in Statistical Machine Learning.
- 2015 – 2016 **University College London, Master of Research, Distinction Honor.**
London, UK *Thesis Topic:* Learning Distributed Representation of Categorical Data.
Supervisor: Prof. Jun Wang.
- 2011 – 2015 **BUPT & QMUL, BSc(Eng), First Class Honor.**
Beijing, CN *Awards:* First Class Academic Scholarship, Merit Student Honor, Excellent Student Cadre.

Publications: Multi-Agent Theories and Algorithms

- 2021 Nicolas Perez-Nieves, Yaodong Yang, Oliver Slumbers, David Mgundi, **Ying Wen**, Jun Wang. Modelling Behavioural Diversity for Learning in Open-Ended Games. ICML 2021.
- 2021 David Mgundi, Yutong Wu, Yali Du, Yaodong Yang, Ziyi Wang, Minne Li, **Ying Wen**, Joel Jennings, Jun Wang. Nonzero-Sum Stochastic Games with Potentials. ICML 2021.
- 2021 Yaodong Yang, Jun Luo, **Ying Wen**, Oliver Slumbers, Daniel Graves, Haitham Bou Ammar, Jun Wang, and Matthew E. Taylor. Diverse Auto-Curriculum is Critical for Successful Real-World Multiagent Learning Systems. Blue Sky Track, AAMAS 2021. **Blue Sky Ideas Award**.
- 2020 **Ying Wen***, Yaodong Yang*, Liheng Chen, Jun Wang, Kun Shao, David Mgundi, Weinan Zhang. Multi-Agent Determinantal Q-Learning. ICML 2020.
- 2020 **Ying Wen***, Yaodong Yang*, Jun Wang. Generalized Recursive Reasoning for Bounded Rationality in Multi-Agent Interactions. IJCAI 2020.
- 2019 **Ying Wen***, Zheng Tian*, Zhichen Gong, Faiz Punakkath, Zou, Shihao, Jun Wang. A Regularized Opponent Model with Maximum Entropy Objective. IJCAI 2019.
- 2019 **Ying Wen***, Yaodong Yang*, Rui Luo, Jun Wang, Wei Pan. Probabilistic Recursive Reasoning for Multi-Agent Reinforcement Learning, ICLR 2019. **[Citations: 45]**

- 2019 Ming Zhou, Yong Chen, **Ying Wen**, Yaodong Yang, Yufeng Su, Zhang Weinan, Dell Zhang, Jun Wang, Han Liu. Factorized Q-Learning for Large-Scale Multi-agent Systems. DAI 2019. [**Citations: 25**]
- 2018 Yaodong Yang, Lantao Yu, Yiwei Bai, **Ying Wen**, Weinan Zhang, Jun Wang. A Study of AI Population Dynamics with Million-Agent Reinforcement Learning. AAMAS 2018. [**Citations: 19**]
- 2018 Haifeng Zhang, Jun Wang, Zhiming Zhou, Weinan Zhang, **Ying Wen**, Yong Yu, Wenxin Li. Learning to Design Games: Strategic Environments in Deep Reinforcement Learning, IJCAI 2018.
- 2017 **Ying Wen***, Peng, Peng*, Yaodong Yang, Quan Yuan, Zhenkun Tang, Haitao Long, Jun Wang. Multiagent Bidirectionally-Coordinated Nets. Emergent Communication Workshop, NIPS 2017. [**Citations: 278**].

Publications: Multi-Agent Systems and Applications

- 2021 Ming Zhou, Ziyu Wan, Hanjing Wang, Muning Wen, Runzhe Wu **Ying Wen**, Yaodong Yang, Weinan Zhang, Jun Wang. MALib: A General Training Framework for Multi-Agent Reinforcement Learning. NeurIPS 2021. (Under Review)
- 2021 Yang Li, Fanglei Sun, Wenbin Song, **Ying Wen**, Kai Li, Jun Wang, Yang Yang. Retrospective Thinking based Multi-Agent System for Wireless Video Transmissions. ICC 2021.
- 2020 Ming Zhou, Jun Luo, Julian Villella, Yaodong Yang, David Rusu, Jiayu Miao, Weinan Zhang, Montgomery Alban, Iman Fadakar, Zheng Chen, Aurora Chongxi Huang, **Ying Wen**, et. al. SMARTS: Scalable Multi-Agent Reinforcement Learning Training School for Autonomous Driving. CoRL 2020, **Best System Paper Award**.

Publications: Others

- 2019 **Ying Wen**, Tianyao Chen, Weinan Zhang, Jun Wang. Pairwise Multi-Layer Nets for Learning Distributed Representation of Multi-field Categorical Data. DLP-KDD 2019.
- 2016 Yanru Qu, Han Cai, Kan Ren, Weinan Zhang, Yong Yu, **Ying Wen**, Jun Wang. Product-based Neural Net for User Response Prediction. ICDM 2016. [**Citations: 249**].
- 2016 **Ying Wen**, Weinan Zhang, Rui Luo, Jun Wang. Learning Text Representation Using Recurrent Convolutional Neural Network with Highway Layers. Neu-IR, SIGIR 2016. [**Citations: 43**].

* Equal Contribution. ****Total Citations: 712**, by 04/May/2021 from Google Scholar.

Open Source Projects

- 2021 MALib: A General Training Framework for Multi-Agent Reinforcement Learning. [[Github Link](#)].
- 2020 SMARTS: A Simulation Platform for Reinforcement Learning and Multi-Agent Research on Autonomous Driving. [[Github Link](#)].

Teaching

- 2021 Artificial Intelligence Programming Practices, SJTU, Lecturer.
- 2018/19/20 MSc/MRes Research Project, UCL, Teaching Assistant.
- 2019/20 COMP1024: Multi-Agent Artificial Intelligence, UCL, Teaching Assistant.
- 2017/18/19 COMPGI15/M052: Information Retrieval and Data Mining, UCL, Teaching Assistant.
- 2017/18 COMPGW02/M041: Web Economics, UCL, Teaching Assistant.

Grants and Honors

- 2021 Blue Sky Ideas Award, AAMAS 2021.
- 2021 Shanghai Sailing Program, Shanghai Science and Technology Committee.

- 2020 Best System Paper Award, CoRL 2020.
2020 Best Intern Award, London Research Center, Huawei.
2016 Feldman PhD Scholarship in Computational Statistics, UCL.

Service

- Conference ICML, AAAI, IJCAI, NeurIPS, IROS, ICAPS, DLP-KDD.
PC Member
Journal Transactions on Information Forensics & Security, Frontiers of Computer Science, Operational Research
Reviewer search

Tutorials and Invited Talks

- 2021/04 MALib: A General Training Framework for Multi-Agent Reinforcement Learning, SenseTime.
2021/04 A Game-Theoretic Approach to Multi-Agent Trust Region Policy Optimization, Tencent AI.
2021/11 Multi-Agent Deep Reinforcement Learning, QCAI, Tianjin University.
2021/10 Deep Multi-Agent Reinforcement Learning: Direct and Game-Theoretical Approaches, Tutorial, DAI 2020
2021/10 Multi-Agent Deep Reinforcement Learning, CS Seminars, Fudan University.
2021/09 Multi-Agent Deep Reinforcement Learning, Intelligent Decision Workshop, Institute of Automation, Chinese Academy of Sciences.
2021/08 Multi-Agent Determinantal Q-Learning, RL Seminars, University of Edinburgh.

References

- 1 **Jun Wang, Professor.**
Computer Science, UCL Centre for Artificial Intelligence
University College London
Turing Fellow, the Alan Turing Institute
Email: jun.wang@cs.ucl.ac.uk
Homepage: <http://www0.cs.ucl.ac.uk/staff/Jun.Wang/>
- 2 **Xinbing Wang, Distinguished Professor**, Executive Director of John Hopcroft Center.
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- 3 **Weinan Zhang, Associate Professor.**
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