

YONGSHENG MEI

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SKILLS

Programming	Python, C, C++, MATLAB, Java, SQL, R, Verilog
Libraries	PyTorch, TensorFlow, Keras, Scikit-Learn, NumPy, Pandas, Matplotlib
Databases	MySQL, PostgreSQL, Microsoft SQL, NoSQL
Tools	Vim, Git, Bash, GDB, PyCharm, Jupyter, LaTeX, Visual Studio, Altium Designer

EDUCATION

The George Washington University (GWU) <i>Doctor of Philosophy in Electrical Engineering</i> Research Areas: Reinforcement Learning, Bayesian Optimization, Network Security GPA: 4.00	Sept. 2019 – Present Washington, DC, US
Huazhong University of Science and Technology (HUST) <i>Bachelor of Engineering in Automation Engineering</i> Outstanding Graduate Award Second Prize of Hubei Province in the 2017 National Undergraduate Electronic Design Contest Relevant Courses: Pattern Recognition, Computer Vision, Control Theory, Computer Architecture GPA: 3.81	Sept. 2015 – June 2019 Wuhan, Hubei, China

EXPERIENCE

Research Assistant <i>Lab for Intelligent Networking and Computing (LINC), GWU</i>	Sept. 2019 - Present Washington, DC, US
Topic 1: Multi-Agent Reinforcement Learning (MARL) · Led a project, MAC-PO , to develop an optimized prioritized experience replay scheme in off-policy MARL by assigning transitions with different prioritization weights. Experiments show that MAC-PO outperform other prioritization methods and several popular MARL algorithms. · Led a project, AccMER , to develop a data-reuse strategy that can be used in conjunction with experience replay to accelerate a group of MARL algorithms.	Aug. 2020 – Present
Topic 2: Bayesian Optimization · Led to develop a novel gradient-aware Bayesian optimization framework for determining local optimum solutions in multimodal functions for hyperparameter tuning, etc. · Led to develop a Bayesian optimization model for doubly stochastic point process on time series data to estimate arrival intensity and detect the peak, change points, etc.	May 2022 – Present
Topic 3: Multi-modal Medical Image Processing · Led to develop a multi-modal image segmentation model for brain tumor MRI data. The framework can improve the accuracy via data fusion and attention with extracted correlated common information microstructures among modalities. The method achieves 92% accuracy for whole tumor on the BraTS-2020 dataset.	Feb. 2021 – Dec. 2022
Topic 4: Network Security via Protocol Customization (DIALECT) · Led a project, MPD , to develop a reliable application-layer moving target defense model via customized communication protocols with dynamic synchronization and management.	Sept. 2019 – Aug. 2021
Visiting Scholar <i>Intelligence Optimization for Networks (ION) Lab, Purdue University</i> Collaborated with Prof. Christopher Brinton on developing a class-incremental federated learning model with time-variant input of each edge device. The model uses the diffusion model as the base generative model for the server and clients for better learning performance.	June 2023 – Aug. 2023 West Lafayette, IN, US

Led the printed circuit board design and FPGA programming for an adaptive signal filter and won the **Second Prize** of Hubei Province in the 2017 National Undergraduate Electronic Design Contest.

PUBLICATIONS

Under Review

1. **Yongsheng Mei**, Hanhan Zhou, and Tian Lan, *Projection-Optimal Monotonic Value Function Factorization in Multi-Agent Reinforcement Learning*.
2. **Yongsheng Mei**, Mahdi Imani, and Tian Lan, *Bayesian Optimization through Gaussian Cox Process Models for Spatio-temporal Data*.

Published

1. **Yongsheng Mei**, Tian Lan, Mahdi Imani, and Suresh Subramaniam, *A Bayesian Optimization Framework for Finding Local Optima in Expensive Multi-Modal Functions*, European Conference on Artificial Intelligence (ECAI), September 2023. [\[PDF\]](#)
2. **Yongsheng Mei**, Tian Lan, and Guru Venkataramani, *Exploiting Partial Common Information Microstructure for Multi-Modal Brain Tumor Segmentation*, ICML workshop on Machine Learning for Multimodal Healthcare Data (ML4MHD), July 2023. [\[PDF\]](#)
3. Kailash Gogineni[†], **Yongsheng Mei**[†], Peng Wei, Tian Lan, and Guru Venkataramani, *AccMER: Accelerating Multi-agent Experience Replay with Cache Locality-aware Prioritization*, IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP), July 2023. [\[PDF\]](#)
4. **Yongsheng Mei**, Hanhan Zhou, Tian Lan, Guru Venkataramani, and Peng Wei, *MAC-PO: Multi-Agent Experience Replay via Collective Priority Optimization*, International Conference on Autonomous Agents and Multiagent Systems (AAMAS), June 2023. [\[PDF\]](#)
5. Kailash Gogineni, **Yongsheng Mei**, Guru Venkataramani, and Tian Lan, *Verify-Pro: A Framework for Server Authentication Using Communication Protocol Dialects*, IEEE Military Communications Conference (MILCOM), September 2022. [\[PDF\]](#)
6. Yurong Chen, **Yongsheng Mei**, Tian Lan, and Guru Venkataramani, *Exploring Effective Fuzzing Strategies to Analyze Communication Protocols*, ACM Digital Threats: Research and Practice, March 2022. [\[PDF\]](#)
7. **Yongsheng Mei**, Kailash Gogineni, Tian Lan, and Guru Venkataramani, *MPD: Moving Target Defense through Communication Protocol Dialects*, International Conference on Security and Privacy in Communication Networks (SecureComm), September 2021. [\[PDF\]](#)
8. Hongfa Xue, **Yongsheng Mei**, Kailash Gogineni, Guru Venkataramani, and Tian Lan, *Twin-Finder: Integrated Reasoning Engine for Pointer-related Code Clone Detection*, International Workshop on Software Clones (IWSC), February 2020. [\[PDF\]](#)

PRESENTATIONS

ICML 2023 workshop on Machine Learning for Multimodal Healthcare Data	<i>July 2023, Honolulu, HI, US</i>
Meeting with the Office of Naval Research (ONR) on the project DIALECT	<i>Feb. 2022, Online</i>
EAI 17th International Conference on Security and Privacy in Communication Networks	<i>Sept. 2021, Online</i>
TPCP 2020 Software Security Summer School (SSSS'20)	<i>Aug. 2020, Online</i>
IEEE 14th International Workshop on Software Clones (IWSC)	<i>Feb. 2020, London, ON, Canada</i>

AWARDS

2023 European Conference on Artificial Intelligence *Call to Arms* Award.

2020, 2021, 2022 GW University Fellowship

2019 HUST Outstanding Graduates.

2017 National Undergraduate Electronic Design Contest, Second Prize of Hubei Province.