YONGSHENG MEI

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SKILLS

Programming	Python, C, C++, MATLAB, Java, Go, R, Verilog
Libraries	PyTorch, TensorFlow, Keras, Scikit-Learn, NumPy, Pandas, Matplotlib
Databases	MySQL, PostgreSQL, Microsoft SQL, NoSQL
Tools	Vim, Git, Linux Bash, PySpark, Jupyter, LaTeX, Visual Studio, Tableau, AWS

EDUCATION

The George Washington University — Sept. 2019 – Present
Ph.D. in Electrical Engineering, GPA: 4.00 — *Washington, DC, US*

Huazhong University of Science and Technology — Sept. 2015 – June 2019
B.E. in Automation Engineering, GPA: 3.81 — *Wuhan, Hubei, China*

EXPERIENCE

Research Assistant — Sept. 2019 - Present
George Washington University, Lab for Intelligent Networking and Computing — *Washington, DC, US*

Topic 1: Bayesian Optimization (BO) — April 2022 – Present

· Led to develop multiple BO models for **determining local optimal solutions** for hyperparameter tuning where optimal solution is not reachable; and **estimate arrival intensity** (outperforming baselines in 7 out of 9 settings) and **detect regions of interest** in discrete **spatial/time series data**.

Topic 2: Reinforcement Learning (RL) — Aug. 2020 – Present

· Led several multi-agent RL projects, such as **MAC-PO** and **AccMER**, to develop a **prioritized experience replay scheme** (outperforming baselines by 10%) and **data-reuse strategy** for acceleration (by 34.8%).

Topic 3: Multimodal Medical Image Segmentation — Feb. 2021 – Dec. 2022

· Led to develop a multimodal image segmentation model for brain tumor MRI data. The framework can improve the accuracy via **self-attention** with extracted correlated **common information microstructures** among modalities. The method achieves 92% accuracy for whole tumor on the BraTS-2020 dataset.

Topic 4: Network Security via Protocol Customization — Sept. 2019 – Aug. 2021

· Led a project, **MPD**, to develop a reliable **self-synchronizing moving target defense** model via customized network and Internet of Things protocols. The system can defend common attacks, such as MITM and DoS.

Visiting Researcher — June 2023 – Aug. 2023
Purdue University, Intelligence Optimization for Networks Lab — *West Lafayette, IN, US*

Led to develop a **continual federated learning** model with time-variant input of each edge device. The model uses the **diffusion model** to generate synthetic data to avoid catastrophic forgetting problems during learning.

Electronic Engineer Intern — Feb. 2017 – Aug. 2017
HUST Electrical and Electronic Technology Innovation Center — *Wuhan, Hubei, China*

Led the printed circuit board design and FPGA programming for an adaptive signal filter and won the **Runner-Up Prize** in the 2017 National Undergraduate Electronic Design Contest.

REPRESENTATIVE PAPERS

1. **Yongsheng Mei**, Mahdi Imani, and Tian Lan, *Bayesian Optimization through Gaussian Cox Process Models for Spatio-temporal Data*, ICLR, May 2024. [PDF]
2. **Yongsheng Mei**, Hanhan Zhou, Tian Lan, Guru Venkataramani, and Peng Wei, *MAC-PO: Multi-Agent Experience Replay via Collective Priority Optimization*, AAMAS, 2023. [PDF]
3. **Yongsheng Mei**, Tian Lan, and Guru Venkataramani, *Exploiting Partial Common Information Microstructure for Multi-Modal Brain Tumor Segmentation*, ICML-ML4MHD, 2023. [PDF]
4. **Yongsheng Mei**, Kailash Gogineni, Tian Lan, and Guru Venkataramani, *MPD: Moving Target Defense through Communication Protocol Dialects*, SecureComm, 2021. [PDF]