Shouren Wang

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Education

Case Western Reserve University — Cleveland, OH
Ph.D. in Computer Science — *Aug. 2024 – Present*

New York University — Brooklyn, NY
M.S. in Computer Engineering | ***GPA: 3.93/4.0*** — *Sep. 2021 – May. 2023*

Hunan University — Changsha, China
Undergraduate in Software Engineering — *Sep. 2015 – June 2017*
Undergraduate and B.E. in Digital Media Technology | ***GPA: 83.16/100.0*** — *Sep. 2017 – June 2019*
(A Software Engineering specialization focusing on visual software/algorithm development)

Selected Work Experience

Research Intern — Aug. 2023 – July 2024
NYU Game Innovation Lab — *Brooklyn, NY*
- Explored the research and methods for creative AI for video games.
- Worked on Fancy Play Agent. Developed game-play agents for Street Fighter 2 based on an extended PPO model.

M.S. Lab Member — Sep. 2022 – May. 2023
NYU CAN Lab — *New York, NY*
- Completed master project on "Simulation for Sensorimotor Control".
- Explored methods for Sensorimotor Control and Reinforcement Learing.

Research and Development Engineer — May 2019 – Sep 2020
AsiaInfo Technology — *Nanjing, China*
- Tested and enhanced the performance of CTDI project as a QA group member, contributed to project efficiency.

Research Technician — July 2016 – Aug. 2016
Institute of Computing Technology, Chinese Academy of Sciences — *Beijing, China*
- Developed a computer vision algorithm with MATLAB image processing functions and Locality Sensitivity Hashing to retrieve similar images from thousands of images.

Selected Projects

Longctx Benchmark V2 for LLM | *Python, PyTorch* — Sep. 2024 – Present
- Developing a more comprehensive benchmark of long context capable approaches for Large Language Models.

Fancy Play Agent | *Python, OpenAI Gym, Stable-Baselines3, PyTorch* — Sep. 2023 – Present
- Developed a PPO Deep Reinforcement Learning model as the game-play agent for Street Fighter II
- Extended the implementation of PPO model in Stable-Baselines3 to support Auxiliary Objectives. Extended the base classes in Stable-Baselines3 to support Multi-modal inputs.
- Working on designing Curriculum Learning and User Studies for developing a fancy focused game play agent

Simulation for Sensorimotor Control | *Python, Scipy, NumPy* — Sep. 2022 – May 2023
- Purposed an model to explain the Central Nervous System's (CNS's) mechanism for arm movement in force field.
- Proposed the State-augmentation mechanism to explain CNS's capability in reducing the effect caused by time delay. Proposed the mechanism based on Value-Iteration based Adaptive Dynamic Programming to explain CNS's capability to solve unknown system dynamics by adapting to the environment.

Majorization Method for Sparse Logistic Regression | *MATLAB* — Feb. 2023 – May 2023
- Applied Majorization method to calculate the quadratic upper bound for log-likelihood objective function with L1 norm. Applied GD, SGD and Newton methods to optimize the upper bound and compared their performance.

Publications

Deep Learning Approach of Suit Classification Recognition, Text. Res. J2019, 4158-164

Technical Skills

Languages: Python, Java, MATLAB, C++
Libraries: PyTorch, Stable-Baselines3, OpenAI Gym, scikit-learn, pandas, NumPy, SciPy
Developer Tools: Git, Slurm, Anaconda, VS Code, Jupyter Notebook