HUI(RICHARD) LI

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EDUCATION

Huazhong University of Science and Technology (HUST), Wuhan, China Sept. 2019 – Expected June 2023
BEng. Computer Science & Technology
GPA 3.98 / 4.0 (93.4 / 100) Major GPA 4.0 / 4.0 (95.0 / 100) Ranking 6 / 363

PUBLICATIONS

SMUG: Towards Robust MRI Reconstruction by Smoothed Unrolling
Hui Li, Jinghan Jia, Shijun Liang, Yuguang Yao, Saiprasad Ravishankar, and Sijia Liu
IEEE International Conference on Acoustics, Speech, and Signal Processing (**ICASSP**) 2023, Submitted

RESEARCH EXPERIENCE

Few-shot Transfer-based Black-box Adversarial Attack Oct. 2022 – Present
Undergraduate thesis advised by Prof. Kun He @ HUST

- Studying the field of combining query-based and transfer-based black-box adversarial attacks

Adversarial Robustness in Medical Image Reconstruction June 2022 – Oct. 2022
Research internship advised by Assistant Prof. Sijia Liu @ Michigan State University

- Proposed Smoothed Unrolling (SMUG) that systematically integrates Randomized Smoothing (RS) with the state-of-the-art model MoDL to mitigate its lack of robustness in MRI reconstruction
- Proposed a novel unrolling loss to improve training efficiency of SMUG
- Conducted extensive experiments on fastMRI dataset, outperforming vanilla MoDL and conventional end-to-end RS on robustness for tiny perturbations, MRI acceleration rates and unrolling steps

Adversarial Learning in Image Classification Nov. 2021 – Mar. 2022
Advised by Prof. Kun He @ HUST

- Analyzed nine adversarial attacks, including white-box, transfer-based and decision-based black-box ones
- Conducted experiments on introducing data priors to guide the walking of adversaries in Boundary Attack

SELECTED PROJECTS

RoboMaster | *Python, ROS* Sept. 2022 – Oct. 2022

- Developed a guidance system that navigates a RoboMaster robot in unknown terrain, using an infrared sensor for mapping and D* Lite algorithm for path finding

RISC-V CPU | *Verilog* Mar. 2022 – May 2022

- Developed a pipelined RISC-V CPU with interrupts and dynamic branch prediction on a FPGA board
- Developed a music rhythm game played with a keyboard on that CPU

Jigsaw Puzzle Game Website | *JavaScript, Paper.js* Oct. 2021 – Dec. 2021

- Developed a jigsaw game website adaptive to two typical platforms (PC & mobile) with three levels of difficulty, four types of hinting to help users and an image uploading function for creating puzzles of theirs
- Proposed and developed a novel magnet jigsaw mode, making the puzzle easier and more fun to solve

HONORS AND AWARDS

College Merit Student (top 5%) Nov. 2020, 2021 & 2022
National Scholarship (top 2%) Dec. 2020

SKILLS

Programming Languages, Databases & Frameworks: Python, Java, C, JavaScript, MySQL, Pytorch
Languages: Mandarin (native), English (advanced, TOEFL 109)