Yikun Wang

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Education

Fudan University Shanghai, China

B.Sc. in Computer Science; *Sept 2019 – Jun 2024 (Expected)*

Reclared major from Electronic Science and Engineering (ESE) to Computer Science (CS); *April 2021*

- **Relevant coursework:** Program Design (A), Introduction of Computer System (I) (A) Machine Learning (A), Natural Language Processing (A), Computer Vision (A), Computer Network (A)
- Cumulative GPA 3.52
- **During 2021-2023 GPA 3.75/4.0**, ranked 8/102 out of the CS major.

Research Experience

Shanghai Collaborative Innovation Center on Intelligent Visual Computing Shanghai, China

Undergraduate Research Assistant *Jun 2021 – Mar 2022*

- Worked in the trustworthy artificial intelligence group with Dr. Wei Zhipeng and Assoc. Prof. Chen Jingjing on a project about transferable attacks on convolution-based neural networks.
- Propose a new generative method to attack current neural networks through perturbating fragile intermediate layer, conducting extensive experiments to verify the efficiency of the aforementioned attack method.

Natural Language Processing Laboratory, Fudan University Shanhai, China

Undergraduate Research Assistant *Sept 2022 – Jun 2023*

- Simulated by the memorization phenomenon and robust overfitting in adversarial training of neural networks, conducted various studies of data effect on adversarially training networks under the supervision of Dr. Zheng Rui. These studies included data sampling based on adversarial loss landscape and softening label constraint based on data robustness.
- Motivated by the strong capability of text rewriting of LLMs, designing a novel data augmentation method, in which the selected examples are augmented by either entity substitute or context rewriting under prompt engineering.

Emory University Atlanta, GA, US

Remote Research Assistant *Jul 2023 – Present*

- Introduce a novel approach to optimize LLMs using ranking metrics under supervision of Dr. Fei Liu, which teaches LLMs to rank a collection of contextually-grounded candidate responses. Rather than a traditional full ordering, we advocate for a partial ordering.
- Our partial ordering is more robust, less sensitive to noise, and can be acquired through human labelers, heuristic functions, or model distillation. We test our system's improved contextual understanding using the latest benchmarks, including a new multi-document question answering dataset. And the work is going to be submitted to ICLR2024.

Computational Evolutionary Intelligence Lab, Duke University Durham, North Carolina, US

Remote Summer Research Assistant *Jul 2023 – Present*

- Exploring the vulnerability toward some attacks of stable signature, a SOTA method for latent watermarking for the diffusion model, collaborating with Jingyang Zhang, under supervision of **Dr. Yiran Chen**
- Developing a more robust watermarking system for protecting digital properties and identifying AI-generated content sources in the AIGC era.

Publications

LLM-DA: Data Augmentation via Large Language Models for Few-Shot Named Entity Recognition
[CoLING2024 Under Review] *Junjie Ye, Nuo Xu,* ***Yikun Wang****, Jie Zhou, Qi Zhang, Tao Gui, Bingning Wang, Xuanjing Huang*

RRescue: Ranking LLM Responses to Enhance Reasoning Over Context
[NAACL2024 Under Review] ***Yikun Wang****, Rui Zheng, Haoming Li, Qi Zhang, Tao Gui, Fei Liu*

Work Experience

Sensetime Technology (Lingang District) Shanghai, China

Computer Vision Multimodal R&D Intern *Feb 2022 – Sept 2022*

- Implemented CV tasks using CNNs such as image classification, position recognition, and object detection.
- Built a generative lidar & camera calibration quality assessment system based on CNN.
- Established a set of filtering rules in order to select high-quality frames, participated in building a private large-scale autonomous dataset.

Awards & Achievements

2019-2020, 2021-2022 Fudan Outstanding Student Scholarship Second Prize ($\approx 25\%$)

2022-2023 Fudan Outstanding Student Scholarship First Prize (Xiaomi Scholarship) ($\approx 5\%$)

Wangdao Undergraduate Researcher Funding Candidate Awarded to undergraduate students who take part in research projects carried out by Fudan University Undergraduate Research Plan (FDUROP)

TOEFL 103, Reading(30/30), Listening(25/30), Speaking(22/30), Writing(26/30)

Skills

Programming: C, C++, Java, Python, MATLAB, R, MySQL, System Verilog

Technologies: Git, Xilinx ISE, Raspberry Pi

Languages: Chinese (Native), English (Professional)