Xiaojun Shan

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Education

University of Electronic Science and Technology of China *Jul. 2020 – Jun. 2024*

B.Eng. in Software Engineering (Elite program) GPA:3.89/4.00

King Abdullah University of Science and Technology *Jun. 2022 – Jul. 2022*

Summer School Student

Publications

1. Qiang Gao*, **Xiaojun Shan***, Yucheng Zhang, Fan Zhou.
   Enhancing Knowledge Transfer for Task Incremental Learning with Data-free Subnetwork *Advances in Neural Information Processing Systems (NeurIPS), 2023*.
2. Xiaoyu Zhou, Zhiwei Lin, **Xiaojun Shan**, Yongtao Wang, Deqing Sun, Ming-Hsuan Yang.
   SAMPLING: Scene-adaptive Hierarchical Multiplane Images Representation for Novel View Synthesis from a Single Image
   IEEE/CVF International Conference on Computer Vision (ICCV), 2023.
3. Qiang Gao, Siqi Yang, **Xiaojun Shan**, Goce Trajcevski, Xovee Xu, Fan Zhou.
   Continual Knowledge Transfer Learning via Adaptive Neuron Search
   Submitted to *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*.
4. ***, **Xiaojun Shan***, ***.
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   Submitted to *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024*.

Research Experience

University of Electronic Science and Technology of China *Jul. 2022 – May. 2023*

Undergraduate Researcher Advisor: Prof. Qiang Gao & Prof. Fan Zhou

- In the TNNLS paper, we regard the used neurons as a shareable knowledge pool that can be dynamically expanded by Reinforcement Learning, and the adaptive neuron selection enables the knowledge consolidation for both old and new coming tasks. I did all the code implementation for the experiment part.
- I found it inefficient and need to save training data which can not meet the need for privacy. So I propose to adopt the Lottery Ticket Hypothesis to generate a subnetwork for each task and utilize the model to generate data to perform zero-shot knowledge distillation within tasks. This paper is accepted by NeurIPS 2023.

Peking University & **Google** *Sep. 2022 – Jun. 2023*

Research Intern Advisor: Prof. Ming-Hsuan Yang & Prof. Yongtao Wang

- To represent unbounded outdoor scenes with intricate geometry and multi-scale details, we incorporate a hierarchical refinement branch, resulting in high-quality synthesized novel views with spatial consistency. And we adopt an adaptive strategy to make our model learns a more effective and efficient representation of each unbounded outdoor scene without redundancy. The paper is accepted by ICCV 2023.
- I plan to contribute one paper to CVPR 2024. We use NeRF to present the whole dynamic 3D auto-driving scene. The contribution of our work mainly lies in two aspects: we first propose to perform object editing in large outdoor dynamic scenes, and we first propose to utilize all 6 cameras' information which is a common setting in the auto-driving dataset without fully using it before. I work on this project together with a Ph.D. candidate and we may be co-first authors.
- I worked on a workshop about Adversarial Attacks on human faces. I modified several open-source codes to generate adversarial examples of human faces and built a complete knowledge system about Adversarial Attacks.

Self-motivated *Jun. 2023 – Present*

- I am interested in the power of Graph and its application to scientific discovery. I am now working on knowledge distillation on graph scenarios. I formulated one idea and I hope to complete one paper before applying to the Ph.D. program.

Professional Experience

Baidu PaddlePaddle *Jul. 2022 – Aug. 2022*

- My team designed a network monitoring system to detect and analyze the comments for Baidu and got outstanding team awards.

Professional Service

Journal Reviewer

- ACM Transactions on Information Systems(TOIS)

Conference Reviewer

- CVPR 2024