Jike Zhong

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Education

Ohio State University 08/2019 - 12/2022
B.S. in Computer Science and Engineering
B.S. in Data Analytics
GPA: 3.85/4.0
Advisor: Dr. Wei-Lun Chao

Johns Hopkins University 05/2023 -
Visiting Researcher in Computer Science Dept.
Advisor: Dr. Alan Yuille

Publications & Preprints

P[1] **Jike Zhong***, Hong-You Chen*, Wei-Lun Chao, *Making Batch Normalization Great in Federated Deep Learning*
Submitted to ICLR 2024

P[2] Hong-You Chen*, **Jike Zhong***, Mingda Zhang, Xuhui Jia, Hang Qi, Boqing Gong, Wei-Lun Chao, Li Zhang, *Learning Shareable Bases for Personalized Federated Image Classification*
Submitted to AAAI 2024

P[3] Cheng-Hao Tu*, Hong-You Chen*, **Jike Zhong**, Zheda Mai, Vardaan Pahuja, Tanya Berger-Wolf, Song Gao, Charles Stewart, Yu Su, Wei-Lun Chao, *Holistic Transfer: Towards Non-Disruptive Fine-Tuning with Partial Target Data*
NeurIPS 2023

P[4] Cheng Zhang, Tai-Yu Pan, Tianle Chen, **Jike Zhong**, Wenjin Fu, and Wei-Lun Chao, *Learning with Free Object Segments for Long-Tailed Instance Segmentation*
ECCV 2022

Industry Experience

Data Science/Software Engineering, Salesforce (LLM Applications) 05/2023 -
Software Engineering Intern, Salesforce (Capacity Forecast) 05/2022 - 08/2022
Software Engineering Intern, Salesforce (Platform Engineering) 05/2021 - 08/2021

Research Experience

Visiting Researcher, JHU CCVL Lab 05/2023 -
- Advisor: Dr. Alan Yuille
- Project: Semantic Representation for Scalable Visual Self-Supervised Learning
- Desc: Current vision models cannot achieve the same **in-context learning** ability and **scalability** we see in LLMs due to the **diversified representations** required for different tasks and the **inability to fully understand global context**. In this project, I seek to discover emergent properties of vision models that can make them truly scalable through the use of effective visual tokens. Specifically, during training, we follow the common masked language modeling strategy and adopt the MAE-VQGAN architecture, however, instead of patch-level masking, we apply object-level masking. This forces the model to treat each object as an **independent entity/token** and forces attention layers in the encoder to look at **global context** which helps to comprehend the visual scene. During inference, we consolidate common vision tasks such as segmentation and colorization into one task as image inpainting. This tokenizer we designed saw the model achieve much improved in-context learning results and become scalable by benefiting from more data.

Undergrad Researcher, OSU MLB Lab 11/2021 - 05/2023

– Advisor: Dr. Wei-Lun Chao
– Project: Representing client model as a combination of "bases" for personalized federated learning P[2]
– Project: Learning long-tailed instance segmentation with object co-segments P[4]
– Project: Analyzing and correcting BatchNorm failure in federated learning under non-iid setting P[1]
– Project: Proposing new learning problem: source-free class adaptation (holistic transfer) P[3]
– Project: Using Mixture of Expert (MoE) model to resolve intra-client variance in non-IID federated learning.

Undergrad Researcher, OSU Radar Lab 09/2020 - 11/2021

– Advisor: Dr. Seth Young
– Project: DV8 – Developing algorithms and tools for flight path classification and clustering
– Project: NEXTOR III – Modeling small airport capacity factors through Reinforcement Learning
– Desc: Poster Presentation: Zhengqi Zhu*, **Jike Zhong***, Lang Xu*, Yifan Song, and Seth Young "Innovative Enhancements to Air Traffic Data Visualization Models"

Teaching

Teaching Assistant, OSU CSE Dept. 09/2020 - 12/2022

– CSE 3241, Database Systems
– CSE 1223, Java Programming

Service

Reviewer, CVPR, ICCV 2023
Peer Mentor, OSU CSE Dept. 2021
Campus Ambassador, Salesforce at OSU 2021
President, Black Swan Investment Group at OSU 2021

Talks

Semantic Representation for Scalable Visual Self-Supervised Learning @CCVL Lab, JHU 2023
Rethinking Normalization in Federated Deep Learning @ICICLE, OSU 2023

Honors & Awards

ASA DataFest 1st place – Best Insight Award 2021
Engineering Honors 2021
Dean's List all semesters 2020
Entrepreneurship and Innovation Scholars 2019
American Invitational Mathematics Examination (AIME) Qualifier 2019

Skills

Tools: PyTorch, TensorFlow, Git
Programming Languages: Python, R, SQL/NoSQL, JavaScript, MATLAB, Java, Apex, HTML