Xiaohan Zou

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Education

Boston University Boston, MA
M.S. in Computer Science 09/2021 – 01/2023
Tongji University Shanghai, China
B.Eng. in Software Engineering 09/2016 – 07/2020

Publications and Submitted Manuscripts

- **Xiaohan Zou**, Changqiao Wu, Lele Cheng, and Zhongyuan Wang. "TokenFlow: Rethinking Fine-grained Cross-modal Alignment in Vision-Language Retrieval", **submitted to ACM Multimedia 2022**.
- **Xiaohan Zou**, and Tong Lin. "Efficient Meta-Learning for Continual Learning with Taylor Expansion Approximation", **IJCNN 2022**.
- **Xiaohan Zou**, Cheng Lin, Yinjia Zhang, and Qinpei Zhao. "To be an Artist: Automatic Generation on Food Image Aesthetic Captioning", **ICTAI 2020**. (Acceptance Rate: 25%, **Oral Presentation**) [Paper]
- **Xiaohan Zou**. "A Survey on Application of Knowledge Graph", **CCEAI 2020**. [Paper]

Research Experience

Machine Learning Engineer Intern, Kuaishou Technology, Beijing 07/2021 – 04/2022

- Devised a new model-agnostic formulation for fine-grained cross-modal semantic alignment and subsumed the recent popular works into the proposed scheme
- Proposed a video-text retrieval method which is competitive when compared with the SoTA approaches with heavy model design by only altering the similarity function, **submitted to ACM Multimedia 2022**
- Developed a PyTorch library for video-text retrieval which is benefiting the group members' research work

Reseach Intern, Peking University, Beijing 08/2020 – 01/2022

- Designed an efficient method for parameter importance estimation via Taylor expansion
- Proposed a fast meta-learning algorithm for continual learning problems, which expresses the gradient of meta-update in closed-form instead of using Hessian information, **accepted by IJCNN 2022**
- Outperformed SoTA methods while optimizing much more efficient in experiments on popular benchmarks

Research Assistant, Tongji University, Shanghai [Project] 03/2020 – 06/2020

- Proposed a novel framework consisting of a single-attribute captioning module and an unsupervised text summarization module for generating aesthetic captions for food images, **published in ICTAI 2020**
- Designed a data filtering strategy inspired by TF-IDF method for building a dataset for this new task
- Designed two new evaluation criteria to assess the novelty and diversity of the generated captions
- Outperformed baselines and existed methods substantially in terms of diversity, novelty and coherence

Reseach Intern, Peking University, Beijing 07/2018 – 08/2018

- Utilized the structure duality to boost the learning of two dual tasks based on shared hidden space
- Designed two denoising auto-encoders consisting of encoders and decoders of two traditional Seq2Seq neural machine translators to make use of unpaired data
- Outperformed strong baselines by 1.0 - 2.9 BLEU on IWSLT'15 and WMT'14 dataset

Awards and Honors

Bronze, China Collegiate Programming Contest (CCPC) 2018
Second Prize, China Mathematical Contest in Modeling (CUMCM) 2017, 2018

Skills

Programming Languages: Python, JavaScript/TypeScript, HTML/CSS, Java, C/C++, MATLAB
Tools and Frameworks: Git, PyTorch, Keras, scikit-learn, Linux, Vue, React, Django, LaTeX
Languages: Chinese (native), English (proficient, TOEFL: 106, GRE: 322)