Miaoge Li

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Education

Xidian University, Xi'an, Shanxi, China
Postgraduate, advised by Prof. Bo Chen , Electronic Engineering (Rank: 13/151) Sept. 2020 – Jun. 2023
Xidian University, Xi'an, Shanxi, China
B.S., Electronic Engineering (GPA: 3.90/ 4.00 ,Rank: 10/113) Sept. 2016 – Jul. 2020

Publications

[1] **Miaoge Li***, Dongsheng Wang*, Xinyang Liu, Zequn Zeng, Ruiying Lu, Bo Chen, Mingyuan Zhou. PatchCT: Aligning Patch Set and Label Set with Conditional Transport for Multi-Label Image Classification. (ICCV2023).

[2] Dongsheng Wang, Yishi Xu, **Miaoge Li**, Bo Chen, Minayuan Zhou. Knowledge-Aware Bayesian deep topic model. (NeurIPS2022, spotlight, top 5%).

[3] Dongsheng Wang, **Miaoge Li**, Xinyang Liu, MingSheng Xu, Bo Chen, Hanwang Zhang. Tuning Multi-mode Token-level Prompt Alignment across Modalities. (NeurIPS2023).

[4] Xinyang Liu, Dongsheng Wang,**Miaoge Li**, Zhibin Duan, Yishi Xu, Bo Chen, Mingyuan Zhou. Patch-Token Aligned Bayesian Prompt Learning for Vision-Language Models. ([Arxiv]. Submission to ICLR2024).

[5] **Miaoge Li**, Bo Chen, Dongsheng Wang, Hongwei Liu.CNN Model Visualization Method for SAR Image Target Classification. (Journal of Radars).

Research Experience

Multi-label classification via conditional transport

- Investigated the multi-label task in a view of conditional transport (CT), where an image is viewed as a mixture of patch embeddings and a mixture of corresponding label embeddings.
- Designed sparse and layer-wise CT formulations to reduce the computational cost and enhance the deep interactions across modalities, contributing to robust and accurate alignments between patches and labels.

Knowledge-aware Bayesian generative model

- Incorporated human prior knowledge into Bayesian generative model and helped to improve recent data-driven models via the easy-to-obtain side-information.
- Proposed a novel generative model under the Bayesian framework (TopicKG), where knowledge graph and the target data are jointly modeled by sharing the same latent embeddings.
- Developed Topic-KGA with the graph adaptive technique by considering the given graph may be noise in Topic-KG and finetuned the knowledge graph according to the current dataset successfully.

Multi-modal prompt tuning model

- Proposed a multi-mode token-level alignment framework for multi-modal prompts tuning, where multiple prompts are learned to improve the representation for both visual and textual modalities.
- Formulated the prompt tuning task as the distribution matching problem, and develop the prompt and token-level OT to tackle the task with a principle and elegant solution.

Visualization for CNN models

- Proposed a new CAM-based method with mixed channel-wise and spatial-wise weights which could more accurately reflect the decision behavior and locate the important areas in the input.
- Implemented a physical structure extraction module for both HRRP and SAR target recognition respectively and combined it with visualization content to better reveal the trustworthiness of CNN models.

Honors and Awards

Outstanding Postgraduate (Xidian University) Jan. 2023
First-class Scholarship (Xidian University) Dec. 2021
First prize of the 11th Mathematics Competition of Chinese College Students Nov. 2019

Skills

Language: CET-6: 556 IELTS: 6.5
Programing: Python, MATLAB, Pytorch