Zecheng(Zephyr) Yin

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Hard-working bee

Hi. My name is Zecheng(Zephyr) Yin. I'm a fanatic about cutting-edge researches about Natural Language Processing(NLP), VLM/LLM, Robot in Simulation, Computer Vision and Graph Data mining. I am currently a researcher and engineer in Shenzhen Future Network of Intelligence Institute (FNii-Shenzhen) led by fellow of Canadian Academy of Engineering Shuguang Cui, and working closely with Prof. Zhen Li in The Chinese University of Hong Kong(Shenzhen).

In my M.S., I was advised by Prof. Yanchun Zhang and Hong Yang in the area of graph neural network medicine textual data mining as well as protein structural predicting at Guangzhou University. During this period, I had an internship at Kuaishou for NLP search mining and an internship at IDEA for financial graph malware detection. Prior to M.S., I was shortly advised by Prof. Jin Li in the area of Federated Learning and Attack at Guangzhou University when in B.S..

Publications

Navigation with VLM framework: Go to Any Language, ICRA'25 (Under Review) — Sept 2024
Zecheng Yin, Shuguang Cui, Zhen Li

TCMCoRep: Traditional Chinese Medicine Data Mining with Contrastive Graph Representation Learning, KSEM'23 (ccf-c, acceptance rate: 23.1%) — Sept 2023
Zecheng Yin, Jinyuan Luo, Yanchun Zhang

HGCL: Heterogeneous Graph Contrastive Learning for Traditional Chinese Medicine Prescription Generation, HIS'22 (acceptance rate: 27.78%) — Sept 2022
Zecheng Yin, Yanchun Zhang

A hybrid-scales graph contrastive learning framework for discovering regularities in traditional Chinese medicine formula, BIBM'21 (ccf-b, acceptance rate: 19.6%) — Sept 2021
Yingpei Wu, ***Zecheng Yin***, Yanchun Zhang

ResMGCN: Residual Message Graph Convolution Network for Fast Biomedical Interactions Discovering, arxiv2023 — Aug 2022
Zecheng Yin

Education

Guangzhou University, M.S. in Computer Science — Sept 2020 – May 2023
- GPA: 3.4/4.0

Guangzhou University, BS in Computer Science — Sept 2016 – May 2020
- GPA: 3.38/4.0

University of Washington, AI&robotics program — Aug 2018 – Sept 2018
- AI&Robotics program, certificate of excellence, mentored by Melody Su

Industry

Research engineer, CUHK(Shenzhen)-FNii, Shenzhen — July 2023 – present
- Robot learning and implementation in simulators.

NLP algorithm intern, Kuaishou, Beijing — May 2021 – June 2022
- Text searching alignment by designed transformers and contrastive learning.
- Construct text dataset and calculate stuffs by long SQL.

Algorithm engineer Intern, IDEA, Shenzhen — June 2022 – Oct 2022
- 2 transferrable graph embedding (graph sage and random walk) experiments, see github repo1 and repo2

- Implementation of PPRGO.

Proficiency

Graph neural network during M.S. papers

- To model different entities, such as text, molecules, and protein atoms, into graphs (both homogeneous and heterogeneous) and to use various types of graph neural networks to predict their properties and interactions.

Natural language processing during M.S. & intern

- Transformer, text entity extraction, text searching alignment, relation construction, representation of tokens, similarity-based recommendation

Reinforcement learning/fine-tuning/usage on large model during ICRA'25 paper

- LoRA PPO reinforcement learning fine-tuning on minicpm-v-2.5.

Unsupervised learning during M.S. papers

- advanced contrastive learning, contrastive loss innovation, classic algorithms like KNN, K-means

SLAM & Navigation in simulation during FNii

- Free exploration in the scene and simultaneously construct the top-down map using depth information. I'm experienced in simulation tools **Habitat** developed by Meta, and **Omnigibson(Behavior-1k)** which is based on **Isaac Sim** developed by Stanford and Nvidia. I implemented an opensourced easy-to-use keyboard control with VLM aside example in Habitat3.

Software developing during FNii

- Implementation of federated learning platform via FATE core service, architecture, file operating system, storage logic, etc..

Open Source & Projects

LLM-powered multi-agent system FNii project

- To utilize LLM as the system core to properly assign decomposed different sub-tasks to agents in order to accomplish long-term task while perceive all information from the environment and respond accordingly and simultaneously (ongoing).
- Arm manipulation with LLM generated PDDL in simulation (ongoing).

Transformer-based Search Engine Kuaishou project

- To embed the text token by empirically designed transformer and contrastive learning based embedding, to perform token similarity based text data searching.

Deployment of GoToAnything(GOAT) on OmniGibson 2024

- intrinsic parameter calibration, coordinates axis definition, ROS message definition, async multi-threading deployment.

Voronoi trajectory exploration 2024

- Exploration trajectory generation and SLAM in the simulation

Chinese Poetry Dataset check the repo

- I have voluntarily maintained the Chinese Poetry dataset, which has garnered hundred stars so far.

Pytorch geometric(PyG) contributor check the repo

- I contributed the implementation of DMGI, an unsupervised graph neural network, to PyG, a popular deep learning library for graph neural networks. I regularly post technical reports and articles on CSDN, which have accumulated over 1 million views.

Skills

Languages: Python, bash, C++, SQL

Proficiency at: Linux, Git, Pytorch, Flask, Latex, ROS, C++