Jiayang Gu
Computer Science
M.S. in UESTC

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GitHub Profile

Education

•UESTC(University of Electronic Science and Technology of China) *Sept. 2021 - June. 2024(expected)*
M.S.; Computer Science and Technology GPA: 3.5/4

•ZJUT (Zhejiang University of Technology) *Sept. 2017 - June. 2021*
B.S.; Computer Science and Technology GPA: 3.55/5; Overall rank 3/130

Experience

•Ant Group - Publications[1] *Dec. 2022 - Oct. 2023(expected)*
Keywords: Recommendation, Knowledge graph, relevance relation extraction Hangzhou, China

- Inspired by embedding-based retrieval (EBR), I proposed a concept of semantic relevance score between two entities in Alipay(Mini-program and content, i.e. small application inside a super-app and informative articles and micro-videoes inside user community). The proposed method combines text features and other side information such as the network of commercial connections from both semantic and topology sides, achieving SOTA performance compared with knowledge graph and GNN-based methods.
- Integrated the above score into the item-to-item recommendation algorithm, proving that the semantic feature can benefit the cross-domain recommendations in an explainable way. The code is released on my GitHub, and this work**[1]** will be released in Arxiv soon.
- Designed a multimodal feature extractor used in Alipay's shopping domain. It has two-fold spotlights: firstly, it can differentiate two items when they have similar shapes and outlines but have different brands; secondly, it can recognize the same items even if they have different camera angles and backgrounds. This algorithm is also deployed online and has achieved great benefits compared with current baselines.

•Center of Future Media, UESTC - Publications[2] *Mar. 2022 - June. 2022*
Keywords: Image captioning, self-supervised visual feature fusion Chengdu, China

- Inspired by the excellent performance of the pre-trained vision model, I integrated the end-to-end training style into the image caption task and proposed an unsupervised method to fuse the grid visual feature into the semantic feature. Then, a dual cooperation module is used to fuse these features in different granularities
- Our method achieved SOTA performance, and had a top 5(at that time) performance at Image COCO Caption online leaderboard.

•A demo system of intelligent unmanned hotel - Achievements[2] *Nov. 2019 - Apr. 2020*
Keywords: Face recognition, human pose estimation Hangzhou, China

- In this system, we deployed several intelligent devices and deep learning algorithms that are needed to run an unmanned hotel. We constructed the whole system in four parts: basic needs, extra customary needs, safety needs, and system backend.
- As a vice team leader, I took the responsibilities of some customary needs and safety needs. For example, I invented a demo of the face-recognition vending machine that can be used in the hotel's lobby, a falling and drowning detection algorithm through monitor cameras located in the hotel's aisle and swimming pool.

Publications

•[1] Extracting Semantic Relevance Relation Between Mini Program and Content in Super App *2023*
***Jiayang Gu**, Xovee Xu, Yulu Tian, Jiadong Huang, Wenliang Zhong, Fan Zhou, Lianli Gao*

- Submitted to KBS(Knowledge-Based System), IF 8.13

•[2] End-to-End image captioning with grid feature fusion and dual cooperation *2022*
*Jingkuan Song, Pengpeng Zeng, **Jiayang Gu**, Jinkuan Zhu, Lianli Gao*

- It has been published by **IJSI**(International Journal of Software and Informatics), and has an online version at **here**.

Technical Skills and Interests

Languages: IELTS 7.0 (7.5 7.5 6.0 6.5)

Developer Tools: Python, Java, C++

Frameworks: Pytorch, ROS(Robotic Operation System), Ray, Matlab

Coursework(Hundred mark system):Digital Circuit and Digital Logic(97), Principles of Automatic Control(97), Microcomputer Interface Technology(97), Operating Systems(94), Principles of Database and Its Application(93)

Areas of Interest: Multimodal representation learning, Recommendation algorithm, Knowledge graph

Achievements

- **[1] Outstanding graduates, school level**
  Top 10% graduates in the whole grade can take this award *2021*
- **[2] China Students Service Outsourcing Innovation and Entrepreneurship Competition**
  National awards *2019*
- **[3] China Students Service Outsourcing Innovation and Entrepreneurship Competition**
  National awards *2018*
- **[4] Provincial Government Scholarship**
  Top 5% students in the whole grade can take this award *2020*
- **[5] Second class scholarship, Twice**
  Top 20%-40% students in the whole grade can have this award *2021, 2022*
- **[6] Excellent Graduation Design, school level**
  Top 10% students in the whole grade can take this award *2021*