YUJIANG PU

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Computer Vision · Machine Learning · Video Understanding · Anomaly Detection

EDUCATION

Michigan State University, East Lansing, MI, USA — Aug 2023 - Present

- Ph.D. student in Computer Science

Communication University of China, Beijing, China — Sep 2020 - Jun 2023

- M.Sc. in Signal and Information Processing (1/45)

Communication University of China, Beijing, China — Sep 2016 - Jun 2020

- B.Eng. in Digital Media Technology (4/90)

RESEARCH PROJECTS

Video Anomaly Detection based on Weakly-supervised Learning — Sep 2021 - Jun 2023

Localizing anomalies in untrimmed videos and pinpointing the start and end of the event at the frame level.

- Constructing a locality-aware attention network to capture local-global context correlations of long videos.
- Proposing a discriminative dynamics learning method with two constraints to enhance the discriminability between normal and abnormal video snippets.
- Conducting extensive experiments to verify the effectiveness of our approach.
- Generating a conference paper accepted by ICME 2022 (Oral).

Violence Recognition using Multimodal Features and Multi-task Learning — Sep 2020 - Jun 2021

Identifying the presence of violence in different scenarios, including surveillance, movies, sports, etc.

- Constructing a multimodal cross-fusion network to generate robust video representation across modalities.
- Introducing word embeddings to capture multiple sub-concepts of violence and constructing a global semantic descriptor to mitigate the intra-class variance.
- Completing a journal article published by Neurocomputing.

PUBLICATIONS

1. **Yujiang Pu**, Xiaoyu Wu*, and Shengjin Wang, "Learning Prompt-Enhanced Context Features for Weakly-Supervised Video Anomaly Detection", in *arXiv*, 2023. (submitted to T-IP)
2. **Yujiang Pu**, Xiaoyu Wu*, Shengjin Wang, Yuming Huang, Zihao Liu, Chaonan Gu, "Semantic Multimodal Violence Detection based on Local-to-Global Embedding," *Neurocomputing*, 2022.
3. **Yujiang Pu** and Xiaoyu Wu*, "Locality-aware Attention Network with Discriminative Dynamics Learning for Weakly Supervised Anomaly Detection", in *IEEE International Conference on Multimedia and Expo (ICME)*, 2022, pp. 1-6. (Oral)
4. **Yujiang Pu** and Xiaoyu Wu*, "Audio-guided attention network for weakly supervised violence detection", in *International Conference on Consumer Electronics and Computer Engineering (ICCECE)*, 2022.

ACADEMIC EXPERIENCE

2022 IEEE International Conference on Multimedia and Expo (ICME 2022) Jul 2022

- Oral presentation at *Weakly-Supervised or Unsupervised Learning Session (Virtual)*

10th Vision And Learning SEminar, VALSE Oct 2021

- Student Attendee

HONORS AND AWARDS

- First-Class Academic Scholarship, Communication University of China — Oct 2022, 2021, 2020
- Graduate Starlight Scholarship, Communication University of China — Nov 2022
- Outstanding Graduates, Communication University of China — Jun 2020
- First-Class Scholarship, Communication University of China — Dec 2019
- Sino-Sky Broadcast First-Class Scholarship, Beijing Sino-sky Hi-Tech Co., Ltd — Dec 2019
- Huachuang Hi-Tech Scholarship, Huachuang Hi-Tech (Beijing) Technology Co., Ltd — Dec 2019
- Second-Class Scholarship, Communication University of China — Dec 2018
- Merit Student, Communication University of China — Dec 2019, 2018, 2017

EXTRA-CURRICULAR ACTIVITIES

- Student Assistant of the School Affairs Office — Dec 2019 - Jan 2020
- Deputy Minister of the Publicity Department of the CUC Youth League Committee — Sep 2018 - Jun 2019
- Student Administrator of the Campus Computer Center — Feb 2018 - Jun 2018
- Tenor, ICES Chorus, Communication University of China — Jun 2017 - Jun 2019
- Volunteer of the 26th Beijing International Radio, TV & Film Exhibition, BIRTV — Aug 2018
- Internship in Huachuang Hi-Tech (Beijing) Technology Co., Ltd — Jun 2018
- Student Journalist in Xin Chuan Times, Communication University of China — Sep 2017 - Jun 2018

PROFESSIONAL SKILLS

Professional Courses Machine Learning (99), Matrix Analysis (98), Optimization Method & Application (95)

English Proficiency IELTS (Overall 7.0 - Listening 8.0 - Reading 7.5 - Writing 6.0 - Speaking 6.5)

Programming Languages & Tools Python, MATLAB, C, LaTeX, PyTorch, Linux, Git