Yutong Wang

CONTACT INFORMATION	Beijing Institute of Technology Homepage Google Scholar Github Email: yutongwang1012@gmail.com Phone: (086) 15613237788

RESEARCH INTEREST

I am a third-year graduate student from the Beijing Institute of Technology. My research interest mainly focuses on machine learning, especially **multi-modal learning, optimal transport, video understanding and generation**.

EDUCATION

Master, Computer Science, GPA: 90.0/100 [3.88/4.0]
Beijing Institute of Technology, Beijing, China   Sep. 2022-Jun. 2025
Advisor: Prof. Dixin Luo, Prof. Hongteng Xu

Bachelor, Computer Science, GPA: 89.2/100 [3.72/4.0]
Beijing Institute of Technology, Beijing, China   Sep. 2018-Jun. 2022

PROJECT EXPERIENCE

Music-guided Trailer generation [ACMMM'2024]   Sep. 2023-Apr. 2024
- Proposed an **inverse partial optimal transport-based music-guided trailer generator**, comprising a conditional movie shot selector and a movie-music shot aligner trained via bi-level optimization.
- Constructed a new **publicly available comprehensive movie-trailer dataset (CMTD)** for movie trailer generation and future video understanding tasks.

Self-supervised Video summarization [ACMMM'2023]   Sep. 2022-Jun. 2023
- Proposed a **unified self-supervised framework** to solve generic and instructional video summarization tasks, using inverse optimal transport to jointly learn optimal transport plans and a projection module to align textual and visuals.
- Proposed an **effective method for generating frame-level pseudo-significance scores** based on the optimal transport plans, which are then used to train a keyframe selector without needing explicit annotations.

Set-supervised Temporal action alignment [ACMMM'2022]   Nov. 2021-Aug. 2022
- Proposed a novel computational optimal transport technique called **unbalanced spectral fused Gromov-Wasserstein (US-FGW)** and applied it to set-supervised temporal action alignment, complemented by a new contrastive learning paradigm.
- Proposed a **learning strategy to compute the US-FGW distance** by leveraging the Bregman alternating direction method of multipliers (B-ADMM) algorithm.

INTERNSHIP EXPERIENCE

1. **Ant Group**, AliPay, *Research Intern*   Apr. 2024-Oct. 2024
   - Participate in the audio-driven portrait animation project EchoMimic. My research topic is **video face enhancement**, including blind face video restoration and de-flickering in real-world and AI-generated videos.
   - Proposed a novel 3DVQGAN-based video enhancement framework with spatial-temporal codebooks that is expected to form a paper for CVPR'2025.

   Advisor: Jiajio Cao, Chenguang Ma

2. **VRC Inc.**, *Research Intern*   Jul. 2023-Sep. 2023

- The research topic is **stylized video generation** based on text descriptions or referenced images, focusing on VLOG videos.
- Proposed a stylized video generation pipeline, that can achieve DreamBooth-based style transfer, SD-based quality enhancement, and video stability enhancement (de-flickering).

Advisor: Hongteng Xu, Yingdi Xie

PUBLICATION

CONFERENCE

Yutong Wang*, S. Zhu*, H. Xu, D. Luo: "An Inverse Partial Optimal Transport Framework for Music-guided Movie Trailer Generation", *ACMMM'2024*.

Yutong Wang, H. Xu, D. Luo: "Self-supervised Video Summarization Guided by Semantic Inverse Optimal Transport", *ACMMM'2023*.

D. Luo, **Yutong Wang**, A. Yue, H. Xu: "Weakly-Supervised Temporal Action Alignment Driven by Unbalanced Spectral Fused Gromov-Wasserstein Distance", *ACMMM'2022*.

BACHELOR THESIS

Yutong Wang, - "Multimodal Video Understanding Based on Optimal Transport", *Beijing Institute of Technology, 2022*.

PATENT

Yutong Wang, S. Zhu, D. Luo. An audio-guided video generation method. CN Patent Application 2024111743976.

Yutong Wang, D. Luo, H. Xu. A self-supervised method for video summarisation. CN Patent Application 202311104554.1.

D. Luo, H. Xu, **Yutong Wang**, A. Yue. 2022. A Retrieval Method. CN Patent ZL 202211404021.0.

D. Luo, H. Xu, **Yutong Wang**, A. Yue. 2022. A Video Understanding Method. CN Patent ZL 202211405957.5.

TEACHING EXPERIENCE

Teaching Assistant, Beijing Institute of Technology.   Sep. 2022-Jun. 2024
Course Name: Programming with Python
Instructor: Dixin Luo

HONOR

National Scholarship, Ministry of Education of China	2024
Travel Grant Award of ACMMM	2023,2024
Special Academic Scholarship, Beijing Institute of Technology	2023
Merit Student, Beijing Institute of Technology	2022
Outstanding Graduate, Beijing Institute of Technology	2022

SERVICE

Reviewer: ACMMM'2023, ACMMM'2024