Yunlong Tang

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https://yunlong10.github.io/

Education

University of Rochester Aug. 2023 – Jun. 2028 (Expected)
Ph.D. Student in Computer Science, advised by Prof. Chenliang Xu *Rochester, NY, US*

Southern University of Science and Technology (SUSTech) Aug. 2019 – Jun. 2023
B.Eng. in Intelligence Science and Technology, advised by Prof. Feng Zheng *Shenzhen, China*

Professional Experience

ByteDance May. 2024 – Aug. 2024
Research Intern, supervised by Gen Zhan and Dr. Yiting Liao *San Jose, CA, US*

- Conducting research on large language models for Video ROI/Saliency Detection.
- Proposed CaRDiff [1], a framework that adopts MLLM with VSOR-CoT (Video Salient Object Ranking Chain of Thought) prompting to obtain saliency ranking map, which helps improve the performance of saliency diffusion model. Results are submitted to AAAI 2024.

SUSTech VIP Lab Aug. 2022 – Jul. 2023
Undergraduate Student Researcher, supervised by Prof. Feng Zheng *Shenzhen, China*

- Participated in the Generic Event Boundary Captioning competition at CVPR 2023 Long-form Video Understanding Workshop, proposed the LLMVA-GEBC model [2] that won the championship.
- Proposed LaunchpadGPT, utilizing a language model to generate Launchpad displaying video for music visualization. Results [3] accepted to International Computer Music Conference (ICMC), 2023.
- Collaborated on the Caption-Anything project, contributed to the segmentation module for supporting interactive visual prompts, and involved in the technical report [4] writing.

Tencent Sept. 2021 - Aug. 2022
Research Intern, supervised by Qin Lin and Dr. Wenhao Jiang *Shenzhen, China*

- Proposed and developed multi-modal segment assemblage network (M-SAN) and importance-coherence reward for training. The method improves efficiency and accuracy compared to current automatic advertisement video editing techniques. Results [5] are accepted to ACCV 2022.
- Deployed the model in Tencent servers online to perform efficient and accurate ad video editing, and filed the patent *An Approach for Automatic Ad Video Editing*.

Research Publications

1. **Y. Tang**, G. Zhan, L. Yang, Y. Liao, and C. Xu, "CaRDiff: Video Salient Object Ranking Chain of Thought Reasoning for Saliency Prediction with Diffusion," *arXiv preprint arXiv:2408.12009*, 2024.
2. **Y. Tang**, J. Zhang, X. Wang, T. Wang, and F. Zheng, "LLMVA-GEBC: Large Language Model with Video Adapter for Generic Event Boundary Captioning," *arXiv preprint arXiv:2306.10354*, 2023.
3. S. Xu*, **Y. Tang***, and F. Zheng, "LaunchpadGPT: Language Model as Music Visualization Designer on Launchpad," *arXiv preprint arXiv:2307.04827*, 2023.
4. T. Wang, J. Zhang, J. Fei, H. Zheng, **Y. Tang**, Z. Li, M. Gao, and S. Zhao, "Caption anything: Interactive Image Description with Diverse Multimodal Controls," *arXiv preprint arXiv:2305.02677*, 2023.

5. **Y. Tang**, S. Xu, T. Wang, Q. Lin, Q. Lu, and F. Zheng, "Multi-modal Segment Assemblage Network for Ad Video Editing with Importance-Coherence Reward," in *Proceedings of the Asian Conference on Computer Vision (ACCV)*, 2022, pp. 3519–3535.
6. **Y. Tang***, J. Bi*, S. Xu*, L. Song, S. Liang, T. Wang, D. Zhang, J. An, J. Lin, R. Zhu, *et al.*, "Video Understanding with Large Language Models: A Survey," *arXiv preprint arXiv:2312.17432*, 2023.
7. J. Bi, **Y. Tang**, L. Song, A. Vosoughi, N. Nguyen, and C. Xu, "EAGLE: Egocentric AGgregated Language-video Engine," in *ACM Multimedia 2024*, 2024.
8. **Y. Tang**, D. Shimada, J. Bi, M. Feng, H. Hua, and C. Xu, "Empowering LLMs with Pseudo-Untrimmed Videos for Audio-Visual Temporal Understanding," *arXiv preprint arXiv:2403.16276*, 2024.
9. H. Hua*, **Y. Tang***, C. Xu, and J. Luo, "V2Xum-LLM: Cross-Modal Video Summarization with Temporal Prompt Instruction Tuning," *arXiv preprint arXiv:2404.12353*, 2024.
10. H. Hua*, **Y. Tang***, Z. Zeng*, L. Cao, Z. Yang, H. He, C. Xu, and J. Luo, "MMComposition: Benchmarking the Compositionality for Pre-trained Vision-Language Models," *yunlong10.github.io*, 2024. URL: https://yunlong10.github.io/projects/mmcomposition/.
11. M. Feng, **Y. Tang**, Z. Zhang, and C. Xu, "Do More Details Always Introduce More Hallucinations in LVLM-based Image Captioning?" *arXiv preprint arXiv:2406.12663*, 2024.

Academic Service

Conference Reviewer — CVPR 2024, ACM MM 2024, ACL 2024, NeurIPS 2024
Joural Reviewer — IEEE Transactions on Multimedia (TMM)

Skills

Languages — English (fluent), Mandarin Chinese (native).
Coding — Python, C++, Java, MATLAB, LaTeX.
Web Dev — HTML, CSS, JavaScript.
Misc. — PyTorch, Hugging Face, OpenCV, FFmpeg, LangChain.

Miscellaneous Experience

Teaching Assistant

2024 **Fall CSC 245/445 Deep Learning**, University of Rochester.
Instructor: Prof. Chenliang Xu.
2023 **Spring CS308 Computer Vision**, SUSTech.
Instructor: Prof. Feng Zheng.
2022 **Fall CS308 Computer Vision**, SUSTech.
Instructor: Prof. Feng Zheng.

Certification

2021 **Certified in Machine Learning, Modeling, and Simulation Principles** from Massachusetts Institute of Technology (MIT). Credential ID: 5ed6ad60-3f98-4009-b342-95bdae56fef5.

Awards and Achievements

2024 **The First Place** in the AIM Challenge on Video Saliency Prediction at the ECCV 2024 Workshop.

Miscellaneous Experience (continued)

2023 **The First Place** in Generic Event Boundary Captioning Track of LOVEU (Long-form Video Understanding) Challenge at CVPR 2023 Workshop.

Excellent Graduate for Exceptional Performance, SUSTech.

Excellent Undergraduate Thesis, Department of Computer Science and Engineering, SUSTech.

2022 **The First Class of Merit Student Scholarship for Exceptional Performance**, SUSTech.

2021 **Research Innovation Award**, Shude College, SUSTech.