LYU TANG, Ph.D

luckybird1994@gmail.com | (+86)13951912413
Github | Homepage | Google Scholar

Education

University of Chinese Academy of Sciences 2021 – 2025
Ph.D. in Computer Application Technology *China*

Nanjing University 2018 – 2021
M.Sc. in Computer Technology *China*

Southwest Jiaotong University 2014 – 2018
B.Sc. in Computer Science and Technology *China*

Research Interests

Foundation Model Based Image Segmentation 2023 – 2024
Open-world Segmentation

Salient Object Detection 2021 – 2024
Salient/Camouflaged Object and Image Matting

Video Compression 2021 – 2024

Academic Impact

Publications
29 *papers in CVPR, ICCV, ACMMM, AAAI, IJCAI, IJCV, T-IP, T-CSVT, T-OMM, etc.*

Citations
892 *citations on Google Scholar*

Reviewer
Serving as a reviewer for ICML, ICLR, AAAI, CVPR, ECCV, ICCV, ACMMM, NeurIPS, IJCV, T-IP, and T-CSVT

12-Selected Publications

Foundation Model Based Image Segmentation

1. Boosting Vision State Space Model with Fractal Scanning. (**AAAI2025 Oral**)
   H. Xiao, **LYU TANG**†, P. Jiang, H. Zhang, J. Chen, B. Li. (**Corresponding and Co-first author**)
2. ASAM: boosting segment anything model with adversarial tuning.(**CVPR2024**)
   B. Li, H. Xiao, and **LYU TANG**† (**Corresponding author**)
3. Towards training-free open-world segmentation via image prompting foundation models. (**IJCV2024**)
   LYU TANG, P. Jiang, H. Xiao, and B. Li

Salient and Camouflaged Object Detection

1. CoVP: Harnessing multimodal large language models for zero-shot camouflaged object detection.(**ACMMM2024**)
   LYU TANG, P.-T. Jiang, Z. Shen, H. Zhang, J. Chen, and B. Li
2. From composited to real-world: Transformer-based natural image matting. (**TCSVT2024**)
   Y. Wang, **LYU TANG**†, Y. Zhong, and B. Li (**Corresponding author**)
3. Toward stable co-saliency detection and object co-segmentation. (**TIP2022**)
   B. Li, **LYU TANG**†, S. Kuang, M. Song, and S. Ding (**Corresponding author**)

4. Re-thinking the relations in co-saliency detection. (**TCSVT2022**)
   LYU TANG, B. Li, S. Kuang, M. Song, and S. Ding
5. Detecting camouflaged object in frequency domain. (**CVPR2022**)
   Y. Zhong, B. Li, **LYU TANG**†, S. Kuang, S. Wu, and S. Ding (**Co-first and Corresponding author**)
6. DisenTANGled high quality salient object detection. (**ICCV2021**)
   LYU TANG, B. Li, Y. Zhong, S. Ding, and M. Song

Video Compression

1. UVC: An Unified Deep Video Compression Framework. (**TOMM2024**)
   LYU TANG, X. Zhang and L. Zhang
2. High Efficiency Deep-learning Based Video Compression. (**TOMM2024**)
   LYU TANG and X. Zhang
3. Scene Matters: Model-based Deep Video Compression.(**ICCV2023**)
   LYU TANG, X. Zhang, G. Zhang, and X. Ma

Self-summary

1. **Characteristics**: Highly self-motivated, aiming to achieve breakthrough scientific results.
2. **Academic Skills**: Proficient in English writing, familiar with Python and PyTorch framework.
3. **Collaboration**: Strong collaboration skills, leads a four-person academic team, and has guided two interns to publish high-quality papers.
4. **Future Plans**: Currently, my main research interests focus on **LVM/MLLM**. I am particularly keen on exploring how to enhance the performance of **LVM/MLLM** in a resource-friendly manner, and investigating the performance limits of **LVM/MLLM** in various tasks, with the goal of extending the performance boundaries of **LVM/MLLM**.

Publication List, H-index and ORCID

Dr. Lyu Tang

University of Chinese Academy of Sciences

- Email: luckybird1994@gmail.com

- Google Scholar: Lyu Tang – Scholar

- Homepage: luckybird1994.github.io

➢ *Publication List*

[1] ***L. Tang***, X. Zhang, and L. Zhang, "UVC: A unified deep video compression framework," ACM Trans. Multimedia Comput. Commun. Appl. (TOMCCAP), vol. 21, 2025.

[2] J. Wang, X. Zhang, G. Zhang, J. Zhu, ***L. Tang***, and L. Zhang, "UAR-NVC: A unified autoregressive framework for memory-efficient neural video compression," arXiv preprint, arXiv:2503.02733, 2025.

[3] ***L. Tang***, J. Zhu, X. Zhang, L. Zhang, S. Ma, and Q. Huang, "CANeRV: Content adaptive neural representation for video compression," arXiv preprint, arXiv:2502.06181, 2025.

[4] ***L. Tang***, P.-T. Jiang, H. Xiao, and B. Li, "Towards training-free open-world segmentation via image prompt foundation models," Int. J. Comput. Vis. (IJCV) , vol. 133, no. 1, pp. 1–15, 2025.

[5] G. Zhang, X. Zhang, and ***L. Tang***, "Unified and scalable deep image compression framework for human and machine," ACM Trans. Multimedia Comput. Commun. Appl. (TOMCCAP), vol. 20, 2024.

[6] ***L. Tang***, P.-T. Jiang, Z.-H. Shen, H. Zhang, J.-W. Chen, and B. Li, "Chain of visual perception: Harnessing multimodal large language models for zero-shot camouflaged object detection," in Proc. 32nd ACM Int. Conf. Multimedia (ACM MM), 2024, pp. 8805–8814.

[7] ***L. Tang*** and B. Li, "Evaluating SAM2's role in camouflaged object detection: From SAM to SAM2," arXiv preprint, arXiv:2407.21596, 2024.

[8] ***L. Tang*** and X. Zhang, "High efficiency deep-learning based video compression," ACM Trans. Multimedia Comput. Commun. Appl. (TOMCCAP), vol. 20, 2024.

[9] ***L. Tang***, H.-K. Xiao, P.-T. Jiang, H. Zhang, J. Chen, and B. Li, "Scalable visual state space

model with fractal scanning," arXiv preprint, arXiv:2405.14480, 2024.

[10] G. Zhang, ***L. Tang***, and X. Zhang, "VQNeRV: Vector quantization neural representation for video compression," in Proc. IEEE Int. Symp. Circuits Syst. (ISCAS), 2024, pp. 1–5.

[11] H. Xiao, ***L. Tang***, B. Li, Z. Luo, and S. Li, "Zero-shot co-salient object detection framework," in Proc. IEEE Int. Conf. Acoust., Speech Signal Process. (ICASSP), 2024.

[12] B. Li, H. Xiao, and ***L. Tang***, "ASAM: Boosting segment anything model with adversarial tuning," in Proc. IEEE/CVF Conf. Comput. Vis. Pattern Recognit. (CVPR), 2024.

[13] G. Zhang, X. Zhang, and ***L. Tang***, "Enhanced quantified local implicit neural representation for image compression," IEEE Signal Process. Lett. (SPL), vol. 30, pp. 1742–1746, 2023.

[14] X. Ma, Y. Xu, X. Zhang, ***L. Tang***, K. Zhang, and L. Zhang, "HM-PCGC: A human-machine balanced point cloud geometry compression scheme," in Proc. IEEE Int. Conf. Image Process. (ICIP), 2023, pp. 2265–2269.

[15] Y. Wang, ***L. Tang***, Y. Zhong, and B. Li, "From composited to real-world: Transformer-based natural image matting," IEEE Trans. Circuits Syst. Video Technol. (TCSVT), vol. 34, no. 4, pp. 2097–2111, 2023.

[16] ***L. Tang***, H. Xiao, and B. Li, "Can SAM segment anything? When SAM meets camouflaged object detection," arXiv preprint, arXiv:2304.04709, 2023.

[17] ***L. Tang***, X. Zhang, G. Zhang, and X. Ma, "Scene matters: Model-based deep video compression," in Proc. IEEE/CVF Int. Conf. Comput. Vis. (ICCV), 2023.

[18] B. Li, ***L. Tang***, S. Kuang, M. Song, and S. Ding, "Toward stable co-saliency detection and object co-segmentation," IEEE Trans. Image Process. (TIP), vol. 31, pp. 6532–6547, 2022.

[19] X. Ma, Q. Yin, X. Zhang, and ***L. Tang***, "FoldingNet-based geometry compression of point cloud with multi descriptions," in Proc. IEEE Int. Conf. Multimedia Expo Workshops (ICMEW), 2022, pp. 1–6.

[20] S. Kuang, S. Meng, B. Xiao, ***L. Tang***, and B. Li, "Rethinking Two-B-Real Net for real-time salient object detection," in Proc. IEEE Int. Conf. Acoust., Speech Signal Process. (ICASSP), 2022.

[21] ***L. Tang***, B. Li, S. Kuang, M. Song, and S. Ding, "Re-thinking the relations in co-saliency detection," IEEE Trans. Circuits Syst. Video Technol. (TCSVT), vol. 32, no. 8, pp. 5453–5466, 2022.

[22] Y. Zhong, B. Li, ***L. Tang***, S. Kuang, S. Wu, and S. Ding, "Detecting camouflaged object in

frequency domain," in Proc. IEEE/CVF Conf. Comput. Vis. Pattern Recognit. (CVPR), 2022.

[23] Y. Zhong, B. Li, ***L. Tang***, H. Tang, and S. Ding, "Highly efficient natural image matting," arXiv preprint, arXiv:2110.12748, 2021.

[24] ***L. Tang***, B. Li, Y. Wu, B. Xiao, and S. Ding, "FAST: Feature aggregation for detecting salient object in real-time," in Proc. IEEE Int. Conf. Acoust., Speech Signal Process. (ICASSP), 2021.

[25] ***L. Tang*** and B. Li, "CoSformer: Detecting co-salient object with transformers," arXiv preprint, arXiv:2104.14729, 2021.

[26] ***L. Tang***, B. Li, Y. Zhong, S. Ding, and M. Song, "Disentangled high quality salient object detection," in Proc. IEEE/CVF Int. Conf. Comput. Vis. (ICCV), 2021.

[27] ***L. Tang*** and B. Li, "CLASS: Cross-level attention and supervision for salient objects detection," in Proc. Asian Conf. Comput. Vis. (ACCV), 2020.

[28] B. Li, Z. Sun, ***L. Tang***, Y. Sun, and J. Shi, "Detecting robust co-saliency with recurrent co-attention neural network," in Proc. Int. Joint Conf. Artif. Intell. (IJCAI), vol. 2, no. 2, pp. 6, 2019.

[29] B. Li, Z. Sun, ***L. Tang***, and A. Hu, "Two-B-Real Net: Two-branch network for real-time salient object detection," in Proc. IEEE Int. Conf. Acoust., Speech Signal Process. (ICASSP), 2019.

➢ *ORCID and H-index*

- ORCID: https://orcid.org/0000-0001-7359-1057

- Google Scholar Profile: https://scholar.google.com/citations?user=BSTLuZcAAAAJ&hl=en

- H-index: 13

- i10-index: 19

- Total Citations: 892