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Prof. Dong Liang received received Ph.D. at the Graduate School of Information Science and Technology , Hokkaido University, Japan in 2015. He received the B.S. degree in Telecommunication Engineering and the M.S. degree in Circuits and Systems from Lanzhou University, China, in 2008 and 2011, respectively.

He is currently an Associate Professor with the College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, and MIIT Key Laboratory of Pattern Analysis and Machine Intelligence, Collaborative Innovation Center of Novel Software Technology and Industrialization. His research interests include machine learning and pattern recognition, intelligent interaction systems, and computational imaging systems.

He was awarded a Outstanding Contribution Award of the China Conference of Biometrics (CCBR'21). He was awarded Gold Medal at the Geneva International Invention Exhibition. He was awarded the Best Student Paper Award from International Symposium on Optomechatronic Technology (ISOT) in 2013. He was awarded the Excellence Research Award from Hokkaido University in 2013. He has published several research papers including in Pattern Recognition, IEEE TIP/TMM/TNNLS/TGRS/TCSVT, and AAAI.

He served as a co-chair of the Organizing Committee of the 2021 China Symposium on Machine Learning and Applications (MLA'21). He is a Program Committee member of the China Conference of Biometrics 2015-2022 (CCBR'15-22). He serves as an Associate Editor of The Visual Computer (Springer) (2023-). He serves as a guest editor of MDPI Sensors (2022-2023). He has served as a reviewer for numerous international academic journals and conferences such as IEEE TIP/TNNLS/TGRS/TCSVT/TITS/JSTARS, and AAAI/JJCAI/ICML/CVPR/ICCV/ICPR/ICIP/ICASSP.

Research Publications

Journal Articles

- 1 Liang, D., Zhang, D., Wang, Q., Wei, Z., & Zhang, L. (2023). Crossnet: Cross-scene background subtraction network via 3d optical flow. *IEEE Transactions on Multimedia* (in press).
- 2 Kang, B., Liang, D., Mei, J., Tan, X., Zhou, Q., & Zhang, D. (2022). Robust rgb-t tracking via graph attention-based bilinear pooling. *IEEE Transactions on Neural Networks and Learning Systems*, 1–12.
DOI: [10.1109/TNNLS.2022.3161969](https://doi.org/10.1109/TNNLS.2022.3161969)
- 3 Liang, D., Geng, Q., Sun, H., Zhou, H., & Kaneko, S. (2022). Inferred box harmonization and aggregation for degraded face detection in crowds. *Multimedia Tools and Applications*, 1–20.
DOI: [10.1007/s11042-022-12319-y](https://doi.org/10.1007/s11042-022-12319-y)

- 4 Liang, D., Geng, Q., Wei, Z., Vorontsov, D. A., Kim, E. L., Wei, M., & Zhou, H. (2022). Anchor retouching via model interaction for robust object detection in aerial images. *IEEE Transactions on Geoscience and Remote Sensing*, 60, 1–13.  doi:10.1109/TGRS.2021.3136350
- 5 Wei, Z., Liang, D., Zhang, D., Zhang, L., Geng, Q., Wei, M., & Zhou, H. (2022). Learning calibrated-guidance for object detection in aerial images. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 15, 2721–2733.  doi:10.1109/JSTARS.2022.3158903
- 6 Xu, B., Liang, D., Li, L., Quan, R., & Zhang, M. (2022). An effectively finite-tailed updating for multiple object tracking in crowd scenes. *Applied Sciences*, 12(3), 1061.  doi:10.3390/app12031061
- 7 Zhao, X., Wang, G., He, Z., Liang, D., Zhang, S., & Tan, J. (2022). Unsupervised inner-point-pairs model for unseen-scene and online moving object detection. *The Visual Computer*, 1–17.  doi:10.1007/s00371-022-02417-1
- 8 Zheng, C., Shi, D., Yan, X., Liang, D., Wei, M., Yang, X., ... Xie, H. (2022). Glassnet: Label decoupling-based three-stream neural network for robust image glass detection. *Computer Graphics Forum*, 41(1), 377–388.  doi:10.1111/cgf.14441
- 9 Li, L., Xue, F., Liang, D., & Chen, X. (2021). A hard example mining approach for concealed multi-object detection of active terahertz image. *Applied Sciences*, 11(23), 11241.  doi:10.3390/app112311241
- 10 Liang, D., Kang, B., Liu, X., Gao, P., Tan, X., & Kaneko, S. (2021). Cross-scene foreground segmentation with supervised and unsupervised model communication. *Pattern Recognition*, 117, 107995.  doi:10.1016/j.patcog.2021.107995
- 11 Sun, H., Cen, J., Liu, N., Liang, D., & Zhou, H. (2021). Mpi: Multi-receptive and parallel integration for salient object detection. *IET Image Processing*, 15(13), 3281–3291.  doi:10.1049/ipr2.12324
- 12 Kang, B., Liang, D., Ding, W., Zhou, H., & Zhu, W.-P. (2020). Grayscale-thermal tracking via inverse sparse representation-based collaborative encoding. *IEEE Transactions on Image Processing*, 29, 3401–3415.  doi:10.1109/TIP.2019.2959912
- 13 Sun, H., Fan, Y., Shen, J., Liu, N., Liang, D., & Zhou, H. (2020). A novel semantics-preserving hashing for fine-grained image retrieval. *IEEE Access*, 8, 26199–26209.  doi:10.1109/ACCESS.2020.2970223
- 14 Sun, H., Yang, J., Shen, J., Liang, D., Ning-Zhong, L., & Zhou, H. (2020). Tib-net: Drone detection network with tiny iterative backbone. *IEEE Access*, 8, 130697–130707.  doi:10.1109/ACCESS.2020.3009518
- 15 Xiang, S., Liang, D., Kaneko, S., & Asano, H. (2020). Robust defect detection in 2d images printed on 3d micro-textured surfaces by multiple paired pixel consistency in orientation codes. *IET Image Processing*, 14(14), 3373–3384.  doi:10.1049/iet-ipr.2019.0724
- 16 Gao, P., Xiang, W., & Liang, D. (2019). Texture-distortion-constrained joint source-channel coding of multi-view video plus depth-based 3d video. *IEEE Transactions on Circuits and Systems for Video Technology*, 29(11), 3326–3340.  doi:10.1109/TCSVT.2018.2877903
- 17 Kang, B., Zhu, W.-P., Liang, D., & Chen, M. (2019). Robust visual tracking via nonlocal regularized multi-view sparse representation. *Pattern Recognition*, 88, 75–89.  doi:10.1016/j.patcog.2018.11.005
- 18 Liang, D., Pan, J., Yu, Y., & Zhou, H. (2019). Concealed object segmentation in terahertz imaging via adversarial learning. *Optik*, 185, 1104–1114.  doi:10.1016/j.ijleo.2019.04.034
- 19 Zhou, W., Kaneko, S., Hashimoto, M., Satoh, Y., & Liang, D. (2019). Foreground detection based on co-occurrence background model with hypothesis on degradation modification in dynamic scenes. *Signal Processing*, 160, 66–79.  doi:10.1016/j.sigpro.2019.02.021
- 20 Kang, B., Zhu, W.-P., & Liang, D. (2017). Robust multi-feature visual tracking via multi-task kernel-based sparse learning. *IET Image Processing*, 11(12), 1172–1178.  doi:10.1049/iet-ipr.2016.1062

- 21 Liang, D., Kaneko, S., Hashimoto, M., Iwata, K., & Zhao, X. (2015). Co-occurrence probability-based pixel pairs background model for robust object detection in dynamic scenes. *Pattern Recognition*, 48(4), 1374–1390.  doi:10.1016/j.patcog.2014.10.020
- 22 Zhao, X., He, Z., Zhang, S., & Liang, D. (2015a). A sparse-representation-based robust inspection system for hidden defects classification in casting components. *Neurocomputing*, 153, 1–10.  doi:10.1016/j.neucom.2014.11.057
- 23 Zhao, X., He, Z., Zhang, S., & Liang, D. (2015b). Robust pedestrian detection in thermal infrared imagery using a shape distribution histogram feature and modified sparse representation classification. *Pattern Recognition*, 48(6), 1947–1960.  doi:10.1016/j.patcog.2014.12.013
- 24 Liang, D., Kaneko, S., Hashimoto, M., Iwata, K., Zhao, X., & Satoh, Y. (2014). Robust object detection in severe imaging conditions using co-occurrence background model. *International Journal of Optomechatronics*, 8(1), 14–29.  doi:10.1080/15599612.2014.890686

Conference Proceedings

- 1 Du, Y., Liang, D., Quan, R., Du, S., & Yan, Y. (2022). More than accuracy: An empirical study of consistency between performance and interpretability. In *Pricai 2022: Trends in artificial intelligence: 19th pacific rim international conference on artificial intelligence, pricai 2022, shanghai, china, november 10–13, 2022, proceedings, part iii* (pp. 579–590).  doi:10.1007/978-3-031-20868-3_43
- 2 Liang, D., Li, L., Wei, M., Yang, S., Zhang, L., Yang, W., ... Zhou, H. (2022). Semantically contrastive learning for low-light image enhancement. In *Proceedings of the aaai conference on artificial intelligence* (Vol. 36, pp. 1555–1563).  doi:10.1609/aaai.v36i2.20046
- 3 Shen, Y., Feng, Y., Wang, W., Liang, D., Qin, J., Xie, H., & Wei, M. (2022). Mba-raingan: A multi-branch attention generative adversarial network for mixture of rain removal. In *Icassp 2022 - 2022 ieee international conference on acoustics, speech and signal processing (icassp)* (pp. 3418–3422).  doi:10.1109/ICASSP43922.2022.9746588
- 4 Zhu, H., Li, P., Xie, H., Yan, X., Liang, D., Chen, D., ... Qin, J. (2022). I can find you! boundary-guided separated attention network for camouflaged object detection. AAAI.
- 5 Geng, Q., Liang, D., Zhou, H., Zhang, L., Sun, H., & Liu, N. (2021). Dense face detection via high-level context mining. In *2021 16th ieee international conference on automatic face and gesture recognition (fg 2021)* (pp. 1–8).  doi:10.1109/FG52635.2021.9667044
- 6 Liang, D., Du, Y., Sun, H., Zhang, L., Liu, N., & Wei, M. (2021). Nlkd: Using coarse annotations for semantic segmentation based on knowledge distillation. In *Icassp 2021 - 2021 ieee international conference on acoustics, speech and signal processing (icassp)* (pp. 2335–2339).  doi:10.1109/ICASSP39728.2021.9414355
- 7 Liang, D., & Liu, X. (2021). Coarse-to-fine foreground segmentation based on co-occurrence pixel-block and spatio-temporal attention model. In *2020 25th international conference on pattern recognition (icpr)* (pp. 3807–3813).  doi:10.1109/ICPR48806.2021.9412814
- 8 Liang, D., Wei, Z., Sun, H., & Zhou, H. (2021). Robust cross-scene foreground segmentation in surveillance video. In *2021 ieee international conference on multimedia and expo (icme)* (pp. 1–6).  doi:10.1109/ICME51207.2021.9428086
- 9 Wu, T., Liang, D., Pan, J., & Kaneko, S. (2019). Context-anchors for hybrid resolution face detection. In *2019 ieee international conference on image processing (icip)* (pp. 3297–3301).  doi:10.1109/ICIP.2019.8803548
- 10 Wu, T., Liang, D., Pan, J., Sun, H., Kang, B., Kaneko, S., & Zhou, H. (2019). Score-specific non-maximum suppression and coexistence prior for multi-scale face detection. In *Icassp 2019 - 2019 ieee international conference on acoustics, speech and signal processing (icassp)* (pp. 1957–1961).  doi:10.1109/ICASSP.2019.8682567

- 11 Zhou, W., Kaneko, S., Hashimoto, M., Satoh, Y., & Liang, D. (2018). A co-occurrence background model with hypothesis on degradation modification for object detection in strong background changes. In *2018 24th international conference on pattern recognition (icpr)* (pp. 1743–1748). [doi:10.1109/ICPR.2018.8546132](#)
- 12 Kang, B., Liang, D., & Zhang, S. (2017). Robust visual tracking via multi-view discriminant based sparse representation. In *2017 ieee international conference on image processing (icip)* (pp. 2587–2591). [doi:10.1109/ICIP.2017.8296750](#)
- 13 Liang, D., Kaneko, S., Sun, H., & Kang, B. (2017). Adaptive local spatial modeling for online change detection under abrupt dynamic background. In *2017 ieee international conference on image processing (icip)* (pp. 2020–2024). [doi:10.1109/ICIP.2017.8296636](#)
- 14 Pan, J., & Liang, D. (2017). Holistic crowd interaction modelling for anomaly detection. In *Biometric recognition* (pp. 642–649). [doi:10.1007/978-3-319-69923-3_69](#)
- 15 Liang, D., Kaneko, S., Hashimoto, M., Iwatao, K., Zhao, X., & Satoh, Y. (2013). Co-occurrence-based adaptive background model for robust object detection. In *2013 10th ieee international conference on advanced video and signal based surveillance* (pp. 401–406). [doi:10.1109/AVSS.2013.6636673](#)