

**Daniel LIN**

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**Education**

PhD, National University of Singapore, Singapore, 2011  
 Bachelor of Engineering, National University of Singapore, Singapore, 2006

**Academic Appointments**

Assistant Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Present

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Jul 2019 - Mar 2021

**RESEARCH****Publications**Journal Articles [Refereed]

Distance based image classification: A solution to generative classifications conundrum?, by LIN, Wen-Yan; LIU, Siying; DAI, Bing Tian; LI, Hongdong. (2022). *International Journal of Computer Vision*, 1-22. (Accepted)

Shell theory: A statistical model of reality, by LIN, Wen-Yan; LIU, Siying; REN, Changhao; CHEUNG, Ngai-Man; LI, Hongdong; MATSUSHITA, Yasuyuki. (2021). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 44 (10), 1-18. <https://doi.org/10.1109/TPAMI.2021.3084598> (Advance Online)

Light structure from pin motion: Geometric point light source calibration, by SANTO, Hiroaki; WAECHTER, Michael; LIN, Wen-Yan; SUGANO, Yusuke; MATSUSHITA, Yasuyuki. (2020). *International Journal of Computer Vision*, 128 (7), 1889-1912. <https://doi.org/10.1007/s11263-020-01312-3> (Published)

GMS: Grid-based motion statistics for fast, ultra-robust feature correspondence, by BIAN, Jia-Wang; LIN, Wen-Yan; LIU, Yun; ZHANG, Le; YEUNG, Sai-Kit; CHENG, Ming-Ming; REID, Ian. (2019). *International Journal of Computer Vision*, 128 (6), 1580-1593. (Published)

BING: Binarized normed gradients for objectness estimation at 300fps, by CHENG, Ming-Ming; LIU, Yun; LIN, Wen-Yan; ZHANG, Ziming; ROSIN, Paul L.; TORR, Philip H. S.. (2019). *Computational Visual Media*, 5 (1), 3-20. <https://doi.org/10.1007/s41095-018-0120-1> (Published)

CODE: Coherence based decision boundaries for feature correspondence, by LIN, Wen-Yan; WANG, Fan; CHENG, Ming-Ming; YEUNG, Sai-Kit. (2018). *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 40 (1), 34-47. <https://doi.org/10.1109/TPAMI.2017.2652468> (Published)

ImageSpirit: Verbal guided image parsing, by CHENG, Ming-Ming; ZHENG, Shuai; LIN, Wen-Yan; VINEET, Vibhav; STURGESS, Paul; CROOK, Nigel; MITRA, Niloy J.; TORR, Philip;. (2014). *ACM Transactions on Graphics*, 34 (1), 1-10. <https://doi.org/10.1145/2682628> (Published)

Simultaneous camera pose and correspondence estimation with motion coherence, by LIN, Wen-Yan; CHEONG, Loong-Fah; TAN, Ping; DONG, Guo; LIU, Siying. (2012). *International Journal of Computer Vision*, 96 (2), 145-161. <https://doi.org/10.1007/s11263-011-0456-9> (Published)

When discrete meets differential: Assessing the stability of structure from small motion, by LIN, Wen-Yan; TAN, Geok-Choo; CHEONG, Loong-Fah. (2010). *International Journal of Computer Vision*, 86 (1), 87-110. <https://doi.org/10.1007/s11263-009-0260-y> (Published)

### Conference Proceedings

Locally varying distance transform for unsupervised visual anomaly detection, by LIN, Wen-Yan; LIU, Zhonghang; LIU, Siying. (2022.0). *Proceedings of the 17th European Conference of Computer Vision, Tel Aviv, Israel, October 23-27*, (pp. 1-17) Israel: SpringerLink. (Accepted)

Deep unsupervised anomaly detection, by LI, Tangqing; WANG, Zheng; LIU, Siying; LIN, Wen-Yan. (2021.0). *2021 IEEE Winter Conference on Applications of Computer Vision (WACV): Virtual, January 5-9: Proceedings*, (pp. 3635-3644) Los Alamitos, CA: IEEE Computer Society. <https://doi.org/10.1109/WACV48630.2021.00368> (Published)

Dual-SLAM: A framework for robust single camera navigation, by HUANG, Huajian; LIN, Wen-Yan; LIU, Siying; ZHANG, Dong; YEUNG, Sai-Kit. (2020.0). *Proceedings of 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems, Las Vegas, Nevada, October 25-29*, (pp. 1-8) United States: (Published)

An analysis of sketched IRLS for accelerated sparse residual regression, by IWATA, Daichi; WAECHTER, Michael; LIN, Wen-Yan; MATSUSHITA, Yasuyuki. (2020.0). *ECCV 2020 16th European Conference on Computer Vision*, (pp. 609-626) UK: (Published)

Dimensionality's blessing: Clustering images by underlying distribution, by LIN, Wen-Yan; LAI, Jian-Huang; LIU, Siying; MATSUSHITA, Yasuyuki. (2018.0). *Proceedings of the 31st Meeting of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018, Salt Lake City, USA, June 18-23*, (pp. 5784-5793) Salt Lake City: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2018.00606> (Published)

GMS: Grid-based motion statistics for fast, ultra-robust feature correspondence, by BIAN, Jiawang; LIN, Wen-Yan; YASUYUKI, Matsushita; YEUNG, Sai-Kit; NGUYEN, Tan-Dat; CHENG, Ming-Ming. (2017.0). *Proceedings of the 30th IEEE Conference on Computer Vision and Pattern Recognition: CVPR 2017, Honolulu, USA, July 21-26*, (pp. 2828-2837) Honolulu, USA: IEEE. <https://doi.org/10.1109/CVPR.2017.302> (Published)

Repatch: Robust feature matching and pose for reconstructing modern cities, by LIN, Wen-Yan; LIU, Siying; JIANG, Nianjuan; DO, Minh N.; TAN, Ping; LU, Jiangbo. (2016.0). *Proceedings of the 14th European Conference, Computer Vision - ECCV 2016, Amsterdam, October 11-14*, (pp. 562-597) Amsterdam: Springer Verlag. [https://doi.org/10.1007/978-3-319-46448-0\\_34](https://doi.org/10.1007/978-3-319-46448-0_34) (Published)

Direct structure estimation for 3D reconstruction, by JIANG, Nianjuan; LIN, Wen-Yan; DO, Minh N.; LU, Jiangbo. (2015.0). *Proceedings of the 28th IEEE Conference on Computer Vision and Pattern Recognition: CVPR 2015, Boston, June 7-12*, (pp. 2655-2663) Boston: IEEE. <https://doi.org/10.1109/CVPR.2015.7298881> (Published)

BING: Binarized normed gradients for objectness estimation at 300fps, by CHENG, Ming-Ming; LIU, Yun; LIN, Wen-Yan; ZHANG, Ziming; ROSIN, Paul L. TORR, Philip H. S. Torr. (2014.0). *Proceedings of the 27th IEEE Conference on Computer Vision and Pattern Recognition, Columbus, 2014 June 23-28*, (pp. 3286-3293) Columbus: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2014.414> (Published)

DAISY filter flow: A generalized discrete approach to dense correspondences, by YANG, Hongsheng; LIN, Wen-Yan; LU, Jiangbo. (2014.0). *Proceedings of the 27th IEEE Conference on Computer Vision and Pattern Recognition, Columbus, 2014 June 23-28*, (pp. 3406-3413) Columbus: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2014.435> (Published)

Dense image correspondence under large appearance variations, by LIU, Linlin; LOW, Kok-Lim; LIN,

Wen-Yan. (2013.0). *Proceedings of the 20th IEEE International Conference on Image Processing, ICIP 2013, Melbourne, Australia, September 15-18*, (pp. 770-774) Melbourne, Australia: <https://doi.org/10.1109/ICIP.2013.6738159> (Published)

Efficient salient region detection with soft image abstraction, by CHENG, Ming-Ming; WARRELL, Jonathan; LIN, Wen-Yan; ZHENG, Shuai; VINEET, Vibhav; CROOK, Nigel. (2013.0). *Proceedings of the 14th IEEE International Conference on Computer Vision, ICCV 2013, Sydney, December 1-8*, (pp. 1529-1536) Sydney, Australia: Institute of Electrical and Electronics Engineers Inc. <https://doi.org/10.1109/ICCV.2013.193> (Published)

Robust non-parametric data fitting for correspondence modeling, by LIN, Wen-Yan; CHENG, Ming-Ming; ZHENG, Shuai; LU, Jiangbo; CROOK, Nigel. (2013.0). *Proceedings of the 14th IEEE International Conference on Computer Vision, ICCV 2013, Sydney, December 1-8*, (pp. 2376-2383) Sydney, Australia: IEEE. <https://doi.org/10.1109/ICCV.2013.295> (Published)

Aligning images in the wild, by LIN, Wen-Yan; LIU, Linlin; MATSUSHITA, Yasuyuki; LOW, Kok-Lim; LIU, Siying. (2012.0). *Proceedings of the 25th IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2012, Providence, Providence, United States, June 16-21*, (pp. 1-8) Providence, United States: IEEE. <https://doi.org/10.1109/CVPR.2012.6247651> (Published)

Smoothly varying affine stitching, by LIN, Wen-Yan; LIU, Siying; MATSUHITA, Yasuyuki; NG, Tian-Tsong; CHEONG, Loong-Fah. (2011.0). *Proceedings of the 24th IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2011, Colorado Springs, United States, June 20-25*, (pp. 345-352) Colorado Springs, United States: IEEE Computer Society. <https://doi.org/10.1109/CVPR.2011.5995314> (Published)

## Research Grants

### Singapore Management University

Untangling the High Dimension Paradox, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Daniel LIN, 2019, S\$100,000

## TEACHING

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### Courses Taught

#### Singapore Management University

Undergraduate Programmes :

- Computational Thinking
- Computer Science Project Experience
- Image Perception
- IS Project Experience (Applications)
- IS/SMT Project Experience (Applications)

Postgraduate Professional Programmes :

- Deep Learning for Visual Recognition
- Empirical Research Project 1
- Empirical Research Project 2

Project

Postgraduate Research Programmes :

Empirical Research Project 1

Empirical Research Project 2

Empirical Research Project 3

Empirical Research Project 4