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## Exploring graph-based clustering and outlier detection algorithms

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# Curriculum Vitae

Jia Li did her undergraduate studies in Software Engineering at Chang'an University from 2012 to 2016. Here she obtained her foundational skills in programming, algorithms, and system design. During her graduate studies at Xi'an Jiaotong University (XJTU), her academic focus shifted to data-driven problem-solving. As part of her MSc training, she conducted research on  $k$ -nearest neighbors and minimum spanning tree data structures, laying the groundwork for her later specialization in machine learning. She completed her MSc in December 2017.

In March 2018, Jia Li transitioned to a PhD program at XJTU, specializing in Data Mining and Machine Learning. Her research centered on clustering algorithms and outlier detection, with applications in anomaly identification for industrial systems. Since 2021, she has been enrolled in a double PhD program jointly hosted by XJTU and Leiden University under the Innovative Talent Cooperation Project. Supervised by Prof. Fons Verbeek at the Leiden Institute of Advanced Computer Science (LIACS), her PhD research bridges theoretical machine learning with practical applications, particularly in clinical practice. As part of her PhD studies, she completed coursework in academic writing, scientific conduct, and advanced computational methods, ensuring a well-rounded skill set for tackling complex challenges.

Looking ahead, Jia Li aims to continue translating machine learning theory into real-world impact. Her future work will focus on developing scalable, ethical AI applications that address pressing issues in healthcare and industry, fostering innovation at the intersection of technology and society.

## Curriculum Vitae

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# Publications

1. Li, J., Wang. X , and Wang. X. "A scaled-MST-based clustering algorithm and application on image segmentation." *Journal of Intelligent Information Systems* 54 (2020): 501-525. DOI: 10.1007/s10844-019-00572-x
2. Li, J., Li, J., Wang, C., Verbeek, F. J., Schultz, T., and Liu, H. . Outlier detection using iterative adaptive mini-minimum spanning tree generation with applications on medical data. (2023) *Frontiers in Physiology*, 14, 1233341. DOI:10.3389/fphys.2023.1233341
3. Li, J., Li, J., Wang, C., Verbeek, F.J., Schultz, T. and Liu, H. . (2024). MS2OD: outlier detection using minimum spanning tree and medoid selection. *Machine Learning: Science and Technology*, 5(1), p.015025. DOI:10.1088/2632-2153/ad2492
4. Li, J.; He, J.; Long, J.; Wang, C.; Kers, J. and Verbeek, F. (2023). Foreground Extraction in Histo-Pathological Image by Combining Mathematical Morphology Operations and U-Net. *In Proceedings of the 16th International Joint Conference on Biomedical Engineering Systems and Technologies - Volume 2: BIOIMAGING*, ISBN 978-989-758-631-6, ISSN 2184-4305, pages 146-153. DOI: 10.5220/0011803500003414