

# Zhiguo Long | Curriculum Vitae

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## Work

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<i>March 2021 – present</i> <b>Lecturer</b>	School of Computing and Artificial Intelligence <i>Southwest Jiaotong University, China</i>
<i>October 2017 – March 2021</i> <b>Lecturer</b>	School of Information Science and Technology <i>Southwest Jiaotong University, China</i>
<i>October 2016 – February 2017</i> <b>Research Associate</b>	Centre for Quantum Computation and Intelligent Systems <i>University of Technology Sydney, Australia</i>

## Education

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<i>July 2012 – March 2017</i> <b>Doctor of Philosophy</b> Thesis Title: Qualitative Spatial and Temporal Representation and Reasoning: Efficiency in Time and Space.	Centre for Quantum Computation and Intelligent Systems <i>University of Technology Sydney, Australia</i>
<i>July 2015 – December 2015</i> <b>Academic Visitor</b> Cooperating with Dr. Steven Schockaert as an academic visitor, focusing on the research of compact representation of qualitative spatial information.	School of Computer Science and Informatics <i>Cardiff University, United Kingdom</i>
<i>2008 – 2012</i> <b>Bachelor of Mathematics</b> Majoring in fundamental mathematics. Sichuan University is one of the top universities in China (sponsored by Project 985), and its mathematics program is among the top five nationwide.	College of Mathematics <i>Sichuan University, China</i>

## Research Interests

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- Artificial Intelligence
- Qualitative Spatial Representation and Reasoning
- Clustering
- Dimensionality Reduction
- Topological Data Analysis
- Applications Involving Qualitative Spatial Information
- Geographic Information Science
- Geo-Spatial Database

## Selected Publications

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### Journal Papers.....

- Yao, Y., Meng, H., Gao, Y., **Long, Z.**, & Li, T.: Linear Dimensionality Reduction Method Based on Topological Properties. *Information Sciences*, 2023, 624, pp. 493–511. (<https://doi.org/10.1016/j.ins.2022.12.098>)
- **Long, Z.**, Gao, Y., Meng, H., Yao, Y., & Li, T.: Clustering Based on Local Density Peaks and Graph Cut. *Information Sciences*, 2022, 600, pp. 263–286. (<https://doi.org/10.1017/S0269888922000054>)
- **Long, Z.**, Meng, H., Li, T., Li, H.-C., & Sioutis, M.: A Framework for Belief Revision Under Restrictions. *The Knowledge Engineering Review*, 2022, 37, pp. e8. (<https://doi.org/10.1017/S0269888922000054>)
- **Long, Z.**, Meng, H., Li, T., & Li, S.: Compact geometric representation of qualitative directional knowledge. *Knowledge-Based Systems*, 2020, 195, pp. 105616. (<https://doi.org/10.1016/j.knosys.2020.105616>)
- **Long, Z.**, Duckham, M., Li, S., & Schockaert, S.: Indexing large geographic datasets with compact qualitative representation. *International Journal of Geographical Information Science*, 2016, vol. 30, no. 6, pp. 1072–1094. (<https://doi.org/10.1080/13658816.2015.1104535>)
- Li, S., **Long, Z.**, Liu, W., Duckham, M., & Both, A.: On redundant topological constraints. *Artificial Intelligence*, 2015, vol. 225, pp. 51–76. (<https://doi.org/10.1016/j.artint.2015.03.010>)
- **Long, Z.** & Li, S. A complete classification of spatial relations using the Voronoi-based nine-intersection model. *International Journal of Geographical Information Science*, 2013, vol. 27, no. 10, pp. 2006–2025. (<https://doi.org/10.1080/13658816.2013.781607>)

### Conference Papers.....

- **Long, Z.**, Hu, Q., Meng, H., & Sioutis, M.: An Incremental Algorithm for Handling Qualitative Spatio-Temporal Information. *COSIT 2022*, pp. 5:1–5:13. (<https://doi.org/10.4230/LIPIcs.COSIT.2022.5>)
- Hu, Q., Gao, Y., **Long, Z.**, Wang, H., & Li, T.: On Large-Scale Qualitative Spatio-Temporal Constraint Redundancy Removal. *ISKE 2021*, 398–405. **Best Student Paper Award.**
- Sioutis, M., **Long, Z.**, & Janhunent, T.: On robustness in qualitative constraint networks, *IJCAI 2020*, pp. 1813–1819 (<https://doi.org/10.24963/ijcai.2020/251>)
- Lee, J. H. & Li, S. & **Long, Z.** & Sioutis, M.: On Redundancy in Simple Temporal Networks. *ECAI 2016*, pp. 828–836. (All authors contributed equally. [https://www.researchgate.net/publication/305726980\\_On\\_Redundancy\\_in\\_Simple\\_Temporal\\_Networks](https://www.researchgate.net/publication/305726980_On_Redundancy_in_Simple_Temporal_Networks))
- **Long, Z.** & Sioutis, M., & Li, S.: Efficient Path Consistency Algorithm for Large Qualitative Constraint Networks. *IJCAI 2016*, pp. 1202–1208. (<http://www.ijcai.org/Proceedings/16/Papers/174.pdf>)
- **Long, Z.** & Schockaert, S., & Li, S.: Encoding Large RCC8 Scenarios Using Rectangular Pseudo-Solutions. *KR 2016*, pp. 463–472. (<http://www.aaai.org/ocs/index.php/KR/KR16/paper/view/12837>)
- Sioutis, M., **Long, Z.**, & Li, S.: Efficiently Reasoning about Qualitative Constraints through Variable Elimination. *SETN 2016*, pp. 1–10. **Best Paper Award.** (<https://doi.org/10.1145/2903220.2903226>)

- **Long, Z.** & Li, S.: On Distributive Subalgebras of Qualitative Spatial and Temporal Calculi. COSIT 2015, pp. 354–374. ([https://doi.org/10.1007/978-3-319-23374-1\\_17](https://doi.org/10.1007/978-3-319-23374-1_17))

## Awards

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**2021:** Best Student Paper Award, ISKE 2021.

**2016:** Best Paper Award, SETN 2016.

**2016:** FEIT Post-Thesis Scholarship, University of Technology Sydney.

**2016:** FEIT HDR Publication Award, University of Technology Sydney.

**2016:** KR 2016 Conference Student Sponsorship for conference fee and accommodation, KR 2016 Conference Committee.