

Van-Giang Trinh: Curriculum Vitae

1 Personal

- Name: Van-Giang Trinh (Trịnh Văn Giang in Vietnamese)
- Address: 52 Av. Escadrille Normandie Niemen, 13397 Marseille Cedex 20
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- Citizenship: Vietnamese



2 Employment History and Education

2.1 Employment History

- Postdoc, Laboratoire d'Informatique & Systèmes, [Aix-Marseille University](#) 04/2022–current
- Researcher, School of Information Science, [Japan Advanced Institute of Science and Technology](#) 12/2021–03/2022
- Research Student, School of Information Science, [Japan Advanced Institute of Science and Technology](#) 10/2017–09/2018
- Research Assistant, Faculty of Computer Science and Engineering, [Ho Chi Minh City University of Technology](#) 06/2016–06/2017
- Internship, School of Information Science, [Japan Advanced Institute of Science and Technology](#) 10/2015–11/2015

2.2 Education

- **Ph.D.**, Information Science, [Japan Advanced Institute of Science and Technology](#), Japan 10/2018–12/2021
Supervisor: Prof. Kunihiko Hiraishi
Title: On attractor detection and optimal control of Boolean networks
Jury: Prof. Kunihiko Hiraishi, Prof. Tatsuya Akutsu, Assoc. Prof. Koichi Kobayashi, Prof. Mineo Kaneko, and Assoc. Prof. Daisuke Ishii
- **Master of Science**, Computer Science, [Ho Chi Minh City University of Technology](#), Vietnam 08/2014–04/2017
Supervisor: Assoc. Prof. Quan Thanh Tho
- **Bachelor of Science**, Computer Science, [Ho Chi Minh City University of Technology](#), Vietnam 09/2009–04/2014
- High School, Le Loi High School, Tho Xuan, Thanh Hoa, Vietnam 09/2006–05/2009

3 Research

3.1 Research Interests

My research interests include theoretical computer science, artificial intelligence, and computational systems biology. In particular, I focus on Boolean networks, Petri nets, answer set programming, and their applications to modeling, analysis, and control of biological systems.

3.2 Awards

1. Outstanding Performance Award, [Japan Advanced Institute of Science and Technology](#) 12/2021
2. Japanese Government (Monbukagakusho: MEXT) Scholarship, [Japan Advanced Institute of Science and Technology](#) 10/2017–09/2021
3. JAIST President Award, [Japan Advanced Institute of Science and Technology](#) 09/2019

3.3 Publications

3.3.1 Submitted

1. **Van-Giang Trinh**, & Belaid Benhamou. (2024). Static analysis of logic programs via Boolean networks. In *International Joint Conference on Artificial Intelligence*. (main track, submitted)
2. **Van-Giang Trinh**, Belaid Benhamou, & Loïc Paulevé. (2023). mpbn: a simple tool for efficient edition and analysis of elementary properties of Boolean networks. *Oxford Bioinformatics*. (under revision)
3. **Van-Giang Trinh**, Belaid Benhamou, Tarek Khaled, & Kunihiko Hiraishi. (2023). Computing attractors of large-scale asynchronous Boolean networks using minimal trap spaces. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. (under review)

3.3.2 International Journals (top venues in bold)

1. **Van-Giang Trinh**, Belaid Benhamou, & Sylvain Soliman. (2023b, September). Trap spaces of Boolean networks are conflict-free siphons of their Petri net encoding. *Theoretical Computer Science*, 971, 114073. (IF 1.1, CORE Rank A) <https://doi.org/10.1016/j.tcs.2023.114073>
2. Tarek Khaled, Belaid Benhamou, & **Van-Giang Trinh**. (2023, July). Using answer set programming to deal with Boolean networks and attractor computation: Application to gene regulatory networks of cells. *Annals of Mathematics and Artificial Intelligence*, 1–38. (IF 1.2) <https://doi.org/10.1007/s10472-023-09886-7>
3. **Van-Giang Trinh**, Belaid Benhamou, Thomas Henzinger, & Samuel Pastva. (2023a, June). Trap spaces of multi-valued networks: Definition, computation, and applications. *Oxford Bioinformatics*, 39(Supplement_1), i513–i522. (IF 5.8, oral presentation at ISMB/ECCB 2023) <https://doi.org/10.1093/bioinformatics/btad262>
4. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2020b). On attractor detection and optimal control of deterministic generalized asynchronous random Boolean networks. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 19(3), 1794–1806. (IF 4.5) <https://doi.org/10.1109/TCBB.2020.3043785>
5. **Van-Giang Trinh**, Tatsuya Akutsu, & Kunihiko Hiraishi. (2020). An FVS-based approach to attractor detection in asynchronous random Boolean networks. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 19(2), 806–818. (IF 4.5) <https://doi.org/10.1109/TCBB.2020.3028862>
6. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2020c). A study on attractors of generalized asynchronous random Boolean networks. *IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences*, 103(8), 987–994. (IF 0.5) <https://doi.org/10.1587/transfun.2019EAP1163>
7. **Van-Giang Trinh**, Le Ngoc Kim Khanh, Bang Ngoc Bao Tam, Tram Loi Quan, Bui Hoai Thang, & Quan Thanh Tho. (2016). Modelling and congestion detection of wireless sensor networks: A concurrent-based approach using coloured Petri nets. *International Journal of Applied Information Systems*, 11(7), 1–9. <https://doi.org/10.5120/ijais2016451629>

8. Pham Hong Long, **Van-Giang Trinh**, Dinh Hoang Mai, Mai Phuong Nam, Quan Thanh Tho, & Ngo Quang Hung. (2014). Assisting students in finding bugs and their locations in programming solutions. *International Journal of Quality Assurance in Engineering and Technology Education (IJQAETE)*, 3(2), 12–27. <https://doi.org/10.4018/ijqaete.2014040102>

3.3.3 International Conferences (top venues in bold)

1. **Van-Giang Trinh**, Belaid Benhamou, Samuel Pastva, & Sylvain Soliman. (2024, February). Scalable enumeration of trap spaces in Boolean networks via answer set programming. In *Annual AAAI Conference on Artificial Intelligence*. (to appear, main track, **oral presentation**, AR 23.8% for the overall conference and 2.3% for oral presentation, CORE Rank A*)
2. **Van-Giang Trinh**, Belaid Benhamou, & Sylvain Soliman. (2023a, August). Efficient enumeration of fixed points in complex Boolean networks using answer set programming. In *International Conference on Principles and Practice of Constraint Programming* (pp. 35:1–35:19). (main track, the primary conference of the Association for Constraint Programming, AR 40%, CORE Rank A) <https://doi.org/10.4230/LIPIcs.CP.2023.35>
3. **Van-Giang Trinh**, Belaid Benhamou, Thomas Henzinger, & Samuel Pastva. (2023b, July). Trap spaces of multi-valued networks: Definition, computation, and applications. In *The 31st Annual Intelligent Systems For Molecular Biology and the 22nd Annual European Conference on Computational Biology*. Oxford University Press. (proceedings track, the flagship meeting of the International Society for Computational Biology, AR 17.9%, CORE Rank A) <https://doi.org/10.1093/bioinformatics/btad262>
4. **Van-Giang Trinh**, Kunihiko Hiraishi, & Belaid Benhamou. (2022, August). Computing attractors of large-scale asynchronous Boolean networks using minimal trap spaces. In *ACM International Conference on Bioinformatics, Computational Biology and Health Informatics* (pp. 1–10). ACM. (the flagship conference of the ACM SIGBio, AR 29%) <https://doi.org/10.1145/3535508.3545520>
5. **Van-Giang Trinh**, Belaid Benhamou, Kunihiko Hiraishi, & Sylvain Soliman. (2022, August). Minimal trap spaces of logical models are maximal siphons of their Petri net encoding. In *International Conference on Computational Methods in Systems Biology* (pp. 158–176). Springer. (AR 65%) https://doi.org/10.1007/978-3-031-15034-0_8
6. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2021, October). An improved method for finding attractors of large-scale asynchronous Boolean networks. In *IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology* (pp. 1–9). IEEE. (AR 51%) <https://doi.org/10.1109/cibcb49929.2021.9562947>
7. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2019, June). Algorithms for finding attractors of generalized asynchronous random Boolean networks. In *12th Asian Control Conference* (pp. 67–72). IEEE. Retrieved from <http://ieeexplore.ieee.org/document/8765169> (AR 73%)
8. Le Ngoc Kim Khanh, **Van-Giang Trinh**, Bui Hoai Thang, & Quan Thanh Tho. (2017, April). Probabilistic modelling for congestion detection on wireless sensor networks. In *International Conference on Control, Decision and Information Technologies* (pp. 0190–0195). IEEE. (AR 48%) <https://doi.org/10.1109/CoDIT.2017.8102589>
9. **Van-Giang Trinh**, Nguyen Duc Khoan, Nguyen Duy Khuong, Vu Phu Thuc, & Quan Thanh Tho. (2016, September). Fast-and-Fit: An intelligent auto-pricing system for airlines travel agencies. In *SAI Intelligent Systems Conference* (pp. 853–865). Springer. https://doi.org/10.1007/978-3-319-56994-9_58

10. **Van-Giang Trinh**, Kunihiko Hiraishi, & Quan Thanh Tho. (2016, July). Modeling and analysing Boolean networks by coloured Petri nets. *IEICE Proceedings Series*, 61(4447). <https://doi.org/10.34385/proc.61.4447>
11. Bao Trung Pham Duy, **Van-Giang Trinh**, Le Dinh Thuan, & Quan Thanh Tho. (2015, October). Reusing symbolic observation graph for efficient model checking. In *International Conference on Knowledge and Systems Engineering* (pp. 250–255). IEEE. <https://doi.org/10.1109/kse.2015.44>

3.3.4 International Workshops (top venues in bold)

1. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2020a, December). An efficient method for approximating attractors in large-scale asynchronous Boolean models. In *International Workshop on Biological Network Analysis and Integrative Graph-Based Approaches, in conjunction with IEEE International Conference on Bioinformatics and Biomedicine* (pp. 1820–1826). IEEE. (AR 60%) <https://doi.org/10.1109/bibm49941.2020.9313230>

3.3.5 Other Publications

1. F. Kordon, H. Garavel, L. M. Hillah, F. Hulin-Hubard and G. Chiardo, A. Hamez, L. Jezequel, A. Miner, J. Meijer, E. Paviot-Adet, D. Racordon, C. Rodriguez, C. Rohr, J. Srba, Y. Thierry-Mieg, **Van-Giang Trinh**, & K. Wolf. (2016, June). *Complete Results for the 2016 Edition of the Model Checking Contest*. Retrieved from <https://mcc.lip6.fr/2016/index.php>

3.4 Talks and Seminars

1. **Lifeware Seminar** (INRIA Saclay), Trap spaces of Boolean networks are conflict-free siphons of their Petri net encoding (05/12/2023)
2. **IRISA Seminar** (IRISA, Rennes), Efficient enumeration of fixed points in complex Boolean networks using answer set programming (30/11/2023)
3. **LIRICA Seminar** (LIS, Marseille), Efficient enumeration of fixed points in complex Boolean networks using answer set programming (20/11/2023)
4. **Demi Journées du Pôle Calcul on Artificial Intelligence** (LIS, Marseille), Efficient enumeration of fixed points in complex Boolean networks using answer set programming (15/06/2023)
5. **CANA Seminar** (LIS, Marseille), Trap spaces of Boolean networks are conflict-free siphons of their Petri net encoding (30/05/2023)
6. **Journées BioLogique BLOSS/CAVIAR** (LIP6, Paris), An approach based on ASP and Petri nets for the calculation of attractors in Boolean networks (25/05/2023)
7. Journées Scientifiques du LIS (Carry le Rouet), Efficient enumeration of minimal trap spaces in large-scale Boolean networks of gene networks (23/05/2023)
8. **LIRICA Seminar** (LIS, Marseille), Minimal trap spaces of Boolean models are maximal siphons of their Petri net encoding (17/10/2022)
9. **LIRICA Seminar** (Virtual), An FVS-based approach to attractor detection in asynchronous Boolean networks (28/06/2021)

4 Teaching

4.1 Courses

- Exercises on Graph Theory (graduate course, teaching assistant)
 - Japan Advanced Institute of Science and Technology: 06/2021–08/2021

- Functional Programming (graduate course, teaching assistant)
 - Japan Advanced Institute of Science and Technology: 10/2020–12/2020
- Introduction to Computer Programming (undergraduate course, visiting lecturer)
 - Ho Chi Minh City University of Technology: 01/2017–06/2017
- Principles of Programming Languages (undergraduate course, teaching assistant)
 - Ho Chi Minh City University of Technology: 09/2013–01/2014, 09/2014–01/2015, 09/2015–01/2016
- Object-Oriented Programming (undergraduate course, teaching assistant)
 - Ho Chi Minh City University of Technology: 09/2015–01/2016
- Principles of Programming Languages (undergraduate course, visiting lecturer)
 - Ho Chi Minh City University of Natural Resources and Environment: 01/2015–05/2015
- Data Structures and Algorithms (undergraduate course, teaching assistant)
 - Ho Chi Minh City University of Technology: 09/2012–01/2013, 01/2015–05/2015
- Programming Fundamentals (undergraduate course, teaching assistant)
 - Ho Chi Minh City University of Technology: 01/2015–05/2015

5 Professional Service

5.1 Journals Reviewers

- SIAM Journal on Applied Dynamical Systems, 1 paper, 2023
- IEEE/ACM Transactions on Computational Biology and Bioinformatics, 1 paper, 2023
- IEEE/ACM Transactions on Computational Biology and Bioinformatics, 1 paper, 2022

6 References

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