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
- Email: trinh.van-giang@lis-lab.fr
- Google Scholar, Website, Lab
- 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: Kunihiko Hiraishi
- **M.S.**, Computer Science, Ho Chi Minh City University of Technology, Vietnam 08/2014–04/2017

  Supervisor: Quan Thanh Tho
- **B.S.**, 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, & Loïc Paulevé. (2023). `mpbn`: a simple tool for efficient edition and analysis of elementary properties of Boolean networks. *Journal*. (under revision)

2. **Van-Giang Trinh**, Belaid Benhamou, Tarek Khaled, & Kunihiko Hiraishi. (2023). Computing attractors of large-scale asynchronous Boolean networks using minimal trap spaces. *Journal*. (under review)

3. **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***. (accepted, AR = 23.75%, CORE Rank A*)

3.3.2 Peer-Reviewed 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 Peer-Reviewed Conferences (top venues in bold)

1. **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

2. **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

3. **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

4. **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

5. **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

6. **Van-Giang Trinh**, & Kunihiko Hiraishi. (2020a, December). An efficient method for approximating attractors in large-scale asynchronous Boolean models. In ***IEEE International Conference on Bioinformatics and Biomedicine*** (pp. 1820–1826). IEEE. (workshop paper, AR 60%) https://doi.org/10.1109/bibm49941.2020.9313230

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 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. LIRICA Seminar (LIS), Efficient Enumeration of Fixed Points in Complex Boolean Networks using Answer Set Programming (20/11/2023)
2. Demi Journées du Pôle Calcul on Artificial Intelligence (LIS), Efficient Enumeration of Fixed Points in Complex Boolean Networks using Answer Set Programming (15/06/2023)
3. CANA Seminar (LIS), Trap Spaces of Boolean Networks are Conflict-Free Siphons of Their Petri Net Encoding (30/05/2023)
4. Journées BioLogique BIOSS/CAVIAR, An Approach Based on ASP and Petri Nets for the Calculation of Attractors in Boolean Networks (25/05/2023)
5. Journées Scientifiques du LIS, Efficient Enumeration of Minimal Trap Spaces in Large-Scale Boolean Networks of Gene Networks (23/05/2023)
6. LIRICA Seminar (LIS), Minimal Trap Spaces of Boolean Models are Maximal Siphons of Their Petri Net Encoding (17/10/2022)
7. LIRICA Seminar (LIS), 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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