

THEOFANIS ARAVANIS, ASST. PROF.

Assistant Professor in Artificial Intelligence with a focus on Knowledge Representation and Reasoning
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ACADEMIC EDUCATION

- 2019:** PhD in Logic-Based Artificial Intelligence, University of Patras, Greece
- 2016:** Master in Business Administration (MBA), University of Patras, Greece
- 2014:** MSc in Energy Production and Management, National Technical University of Athens, Greece
- 2012:** Diploma Degree, Department of Electrical and Computer Engineering, University of Patras, Greece

ACADEMIC POSITIONS

- 2025 – today:** Assistant Professor, Department of Digital Systems, University of the Peloponnese, Greece
- 2023 – 2025:** Adj. Assistant Professor, Department of Mechanical Engineering, University of the Peloponnese, Greece
- 2019 – 2023:** Adj. Lecturer, Department of Mechanical Engineering, University of the Peloponnese, Greece
- 2017 – 2019:** Laboratory Associate, Technological Educational Institute of Western Greece, Greece

POST-DOCTORAL RESEARCH

- 2023 – 2025:** Research Project *SAFE-AORTA* (Development of a clinical decision support system for Abdominal Aortic Aneurysm disease, based on Artificial-Intelligence models)
- 2024 – 2025:** Research Project *OLEAS* (Development of an intelligent system for soil and plant tissue analysis)
- 2022 – 2023:** Research Project *MANFISH* (Development of intelligent systems for the diagnosis and treatment of fish-diseases)
- 2021 – 2022:** Research Project *C-ROADS GREECE* (Development of Intelligent Transportation Systems for Attiki Odos SA, used for real-time normalization of traffic flow)
- 2019 – 2021:** Post-Doctoral Researcher, Biennial Scholarship by the *State Scholarships Foundation (IKY)*, University of Patras, Greece

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

- Theofanis Aravanis**, “Belief update through semiorders”, *Mathematics*, Vol. 13, Iss. 13, 2025.
- Theofanis Aravanis**, “Towards machine learning as AGM-style belief change”, *International Journal of Approximate Reasoning*, Vol. 183, 109437, 2025.
- Theofanis I. Aravanis**, “On the consistency between belief revision and belief update”, *Journal of Artificial Intelligence Research*, Vol. 82, pp. 1743-1771, 2025.
- Theofanis Aravanis**, “Darwiche and Pearl’s iterated belief revision: Not always Spohn-expressible”, *Mathematics*, Vol. 13, Iss. 6, 2025.
- Theofanis Aravanis**, “Tailoring disjoint belief structures to the AGM framework”, *Journal of Logic and Computation*, Vol. 35, Iss. 4, 2024.
- Maria Andrikopoulou, **Theofanis Aravanis**, James P. Delgrande, Panagis Karazeris, and Pavlos Peppas, “Filters-based revision”, *Annals of Mathematics and Artificial Intelligence*, 2024.
- Theofanis Aravanis**, Grigorios Chrimatopoulos, Michalis Xenos, and Efstratios E. Tzirtzilakis, “Forecasting two-dimensional channel flow using Machine Learning”, *Physics of Fluids*, Vol. 36, 2024.
- Theofanis Aravanis**, Ioannis Hatzilygeroudis, and Georgios Spiliopoulos, “Ensemble modelling for predicting fish mortality”, *Applied Sciences*, Vol. 14, 2024.
- Theofanis I. Aravanis**, “Collective belief revision”, *Journal of Artificial Intelligence Research*, Vol. 78, pp. 1221-1247, 2023.
- Konstantinos Kovas, Ioannis Hatzilygeroudis, Konstantinos Dimitropoulos, Georgios Spiliopoulos, Konstantinos Poulos, Evi Abatzidou, **Theofanis Aravanis**, Aristeidis Ilias, Grigorios Kanlis, and John Theodorou, “Using level-based multiple reasoning in a Web-based intelligent system for the diagnosis of farmed fish diseases”, *Applied Sciences*, Vol. 13, 2023.

11. **Theofanis Aravanis**, “Deductive belief change”, *Annals of Mathematics and Artificial Intelligence*, Vol. 91, pp. 489-515, 2023.
12. **Theofanis Aravanis**, “Generalizing Parikh’s criterion for relevance-sensitive belief revision”, *ACM Transactions of Computational Logic*, Vol. 24, Article No. 18, 2023.
13. **Theofanis Aravanis** and Pavlos Peppas, “Theory-relational belief revision”, *Annals of Mathematics and Artificial Intelligence*, Vol. 90, pp. 573-594, 2022.
14. **Theofanis Aravanis**, “An epistemological study of theory change”, *Bulletin of the Section of Logic*, Vol. 51, pp. 1-26, 2022.
15. **Theofanis Aravanis**, “An ASP-based solver for parametrized-difference revision”, *Journal of Logic and Computation*, Vol. 32, pp. 630-666, 2021.
16. **Theofanis I. Aravanis**, “Relevance in belief update”, *Journal of Artificial Intelligence Research*, Vol. 72, pp. 251-283, 2021.
17. **Theofanis Aravanis**, “On uniform belief revision”, *Journal of Logic and Computation*, Vol. 30, pp. 1357-1376, 2020.
18. **Theofanis I. Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “Incompatibilities between iterated and relevance-sensitive belief revision”, *Journal of Artificial Intelligence Research*, Vol. 69, pp. 85-108, 2020.
19. **Theofanis I. Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “A study of possible-worlds semantics of relevance-sensitive belief revision”, *Journal of Logic and Computation*, Vol. 30, pp. 1125-1142, 2020.
20. **Theofanis I. Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “Full characterization of Parikh’s relevance-sensitive axiom for belief revision”, *Journal of Artificial Intelligence Research*, Vol. 66, pp. 765-792, 2019.
21. **Theofanis Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “An investigation of parametrized difference revision operators”, *Annals of Mathematics and Artificial Intelligence*, 2019.

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL CONFERENCES

1. **Theofanis Aravanis**, Grigorios Chrimatopoulos, Michalis Xenos, and Efstratios E. Tzirtzilakis, “Machine-learning modelling of a fluid flow in a two-dimensional channel”, *Proceedings of the 15th International Conference on Information, Intelligence, Systems and Applications (IISA 2024)*, 2024.
2. **Theofanis Aravanis**, Aristeidis Ilias, Ioannis Hatzilygeroudis, and Georgios Spiliopoulos, “Predicting fish-mortality: Artificial Neural Networks vs Symbolic Regression”, *Proceedings of the 14th International Conference on Information, Intelligence, Systems and Applications (IISA 2023)*, 2023.
3. **Theofanis Aravanis**, Andreas Petratos, Georgia Douklia, and Epraxia Plati, “Search problems in contemporary power grids”, *Proceedings of the 22nd International Conference on Engineering Applications of Neural Networks (EANN 2021)*, pp. 331-342, 2021.
4. **Theofanis Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “Modelling belief-revision functions at extended languages”, *Proceedings of the 24th European Conference on Artificial Intelligence (ECAI 2020)*, pp. 601-607, 2020.
5. **Theofanis Aravanis**, Andreas Petratos, and Georgia Douklia, “An ASP-based approach for phase balancing in power electrical systems”, *Proceedings of the 21st International Conference on Engineering Applications of Neural Networks (EANN 2020)*, pp. 511-520, 2020.
6. **Theofanis Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “Observations on Darwiche and Pearl’s approach for iterated belief revision”, *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019)*, pp. 1509-1515, 2019.
7. **Theofanis I. Aravanis**, Tryfon-Chrysovalantis I. Aravanis, and Polydoros N. Papadopoulos, “Fault diagnosis in Direct Current electric motors via an Artificial Neural Network”, *Proceedings of the 20th International Conference on Engineering Applications of Neural Networks (EANN 2019)*, pp. 488-498, 2019.
8. **Theofanis Aravanis**, Konstantinos Demiris, and Pavlos Peppas, “Legal reasoning in Answer Set Programming”, *Proceedings of the 2018 IEEE 30th International Conference on Tools with Artificial Intelligence (ICTAI 2018)*, pp. 302-306, 2018.
9. **Theofanis Aravanis**, Pavlos Peppas, and Mary-Anne Williams, “Epistemic-entrenchment characterization of Parikh’s axiom”, *Proceedings of the 26th International Joint Conference on Artificial Intelligence (IJCAI 2017)*, pp. 772-778, 2017.

10. **T. I. Aravanis**, E. C. Pyrgioti, and I. F. Gonos, "Lightning-induced overvoltages in the Hellenic electricity distribution network", *Proceedings of the 2016 IEEE 5th International Conference on High Voltage Engineering and Application (ICHVE 2016)*, paper P-1-28, 2016.

PUBLICATIONS IN PEER-REVIEWED NATIONAL JOURNALS

1. **Theofanis Aravanis**, "Belief revision against background knowledge", *Bulletin of the Hellenic Mathematical Society*, Vol. 66, pp. 1-10, 2022.
2. **Theofanis Aravanis**, "On the nature of scientific law", *Peloponnes: Interdisciplinary Journal of the University of Peloponnese*, Vol. 5, No. 1, pp. 78-85, 2021.
3. **Theofanis I. Aravanis**, "Strengthening parametrized-difference belief revision", *Bulletin of the Hellenic Mathematical Society*, Vol. 64, pp. 69-91, 2020.

PUBLICATIONS IN PEER-REVIEWED NATIONAL CONFERENCES

1. **Theofanis Aravanis**, Grigorios Chrimatopoulos, Michalis Xenos, and Efstratios E. Tzirtzilakis, "Machine learning-based geometric interpolation for fluid-flow modelling", *Proceedings of the 28th Pan-Hellenic Conference on Progress in Computing Informatics with International Participation (PCI 2024)*, ACM, 2024.
2. **Theofanis Aravanis** and Ioannis Kabouris, "A neuro-symbolic approach for fault diagnosis in smart power grids", *Proceedings of the 26th Pan-Hellenic Conference on Informatics with International Participation (PCI 2022)*, ACM, pp. 90-95, 2022.
3. **Theofanis Aravanis**, "Incorporating belief merging into relevance-sensitive belief structures", *Proceedings of the 26th Pan-Hellenic Conference on Informatics with International Participation (PCI 2022)*, ACM, pp. 8-13, 2022.
4. **Theofanis Aravanis**, "Relevance-sensitive belief revision in the realm of partial preorders", *Proceedings of the 25th Pan-Hellenic Conference on Informatics with International Participation (PCI 2021)*, ACM, pp. 1-5, 2021.
5. **Theofanis Aravanis**, "Properties of parametrized-difference revision", *Proceedings of the 13th Pan-Hellenic Logic Symposium (PLS 2021)*, 2021.
6. **Theofanis Aravanis** and Pavlos Peppas, "Types of rational Horn revision operators", *Proceedings of the 13th Pan-Hellenic Logic Symposium (PLS 2021)*, 2021.
7. **Theofanis Aravanis**, Pavlos Peppas, and Mary-Anne Williams, "On the strong version of Parikh's relevance-sensitive axiom for belief revision", *Proceedings of the 12th Pan-Hellenic Logic Symposium (PLS 2019)*, 2019.
8. Maria Andrikopoulou and **Theofanis Aravanis**, "Mapping parametrised difference revision operators to belief contraction", *Proceedings of the 12th Pan-Hellenic Logic Symposium (PLS 2019)*, 2019.
9. **Theofanis I. Aravanis**, Pavlos Peppas, and Mary-Anne Williams, "Iterated belief revision and Dalal's operator", *Proceedings of the 10th Hellenic Conference on Artificial Intelligence (SETN 2018)*, ACM, Article No. 26, 2018.
10. **Theofanis I. Aravanis** and Pavlos Peppas, "Belief revision in Answer Set Programming", *Proceedings of the 21st Pan-Hellenic Conference on Informatics (PCI 2017)*, ACM, Article No. 2, 2017.
11. **Theofanis I. Aravanis**, Pavlos Peppas, and Mary-Anne Williams, "Epistemic-entrenchment characterization of parametrized difference revision operators", *Proceedings of the 11th Pan-Hellenic Logic Symposium (PLS 2017)*, pp. 202-208, 2017.
12. **Theofanis I. Aravanis** and Pavlos Peppas, "Six degrees of separation in Answer Set Programming", *Proceedings of the 11th Pan-Hellenic Logic Symposium (PLS 2017)*, pp. 209-215, 2017.

SERVICESHIPS – AWARDS

- **Visiting Researcher** for one (1) month at the University of Technology Sydney (UTS), Australia, 2017
- **Reviewer** for Artificial Intelligence Journal, Journal of Artificial Intelligence Research, Annals of Mathematics and Artificial Intelligence, The Computer Journal, International Journal of Approximate Reasoning, Journal of Logic and Computation, Artificial Intelligence and Law, Physics of Fluids, MDPI Journals, KR 2024 & 2025, IJCAI-PRICAI 2020, ECAI 2020, JELIA 2019
- **Publicity Chair** of the 20th and 17th International Conferences on Principles of Knowledge Representation and Reasoning (KR 2023 & KR 2020)
- **Supervision** of more than 20 Diploma Theses
- **Author** of 2 University Textbooks
- **Outstanding Teaching Award** by the Department of Mechanical Engineering of the University of the Peloponnese (2022 & 2023)
- Regular article publication in the Greek scientific/technical magazines *Modern Technical Review*, *Electrician*, *Thermohydraulic*, *Hydraulic*, *Physics News*, *Business Administration Bulletin and Manager*, with the main topic being a plethora of electromechanical issues
- Regular participation in notable Conferences/Seminars/Workshops

MEMBERSHIPS

- Hellenic Artificial Intelligence Society (EETN)
- Technical Chamber of Greece (TEE)
- Cybersecurity, Hardware, AI, and Networks Laboratory (CHAIN Lab) of the Department of Digital Systems of the University of the Peloponnese