

BRIEF CURRICULUM VITAE AND STUDIORUM

PROF.CESARE ALIPPI

EDUCATION AND ACADEMIC POSITION

Cesare Alippi was born in Lecco (LC) on March the 1st 1966.

1985-1990 M.Eng. *Summa cum Laude*, Electrical Engineering, Politecnico di Milano, Milan, Italy.

1990 - 1992: *Research Fellow*, Dep. Computer Science, University College London, London, UK.

1993: *Honorary Researcher*, Dep. Computer Science, University College London, London, UK.

1991-1995 *Ph.D* in Computer and Control Engineering, Politecnico di Milano, Milan, Italy.

April - July 1994: *Visiting Scholar*, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, USA

1996 - 1998: *Research Scientist*, Italian National Research Council, Italy.

1998 - 2002: *Associate Professor*, Dep. Elettronica e Informazione, Politecnico di Milano, Italy.

2002 - : *Full Professor* in Information Processing Systems, Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy.

2010: *Frédéric Joliot-Curie Fellowship*, École Supérieure de Physique et de Chimie Industrielles, Paris, France

July 2012 – June 2013: *Research collaborator*, Università Svizzera Italiana, Lugano, Switzerland

July-September 2012: *Visiting Professorship for Senior International Scientists*, Chinese Academy of Sciences

April-October 2013: *Visiting Professorship for Senior International Scientists*, Chinese Academy of Sciences

February 2014: *Short Term Visit Professor*, Institute for Infocomm Research (I²R), A*STAR, Singapore

2014: *Lecturer*, Università Svizzera italiana, Lugano, Switzerland

2016 -: *Full Professor in Cyber-physical and embedded systems*, Università Svizzera italiana, Switzerland

April 2016- March 2019: *Visiting Professor*, Kobe University, Japan

June 2017-: *Visiting Professor*, Guangdong University of Technology, Guangzhou, China

December 2018-: *Consultant Professor*, Northwestern Polytechnic of Xi'an, Xi'an, China

December 2020-March 2024: *Prorector for internationalization*, Università Svizzera italiana, Switzerland

May 2023 -: *Scientific Director* of the Swiss AI Lab IDSIA

RESEARCH ACTIVITY

My research focuses on intelligent cyber-physical systems and graph-based machine learning for complex, data-rich, and evolving environments. Many modern infrastructures—such as distributed sensor/actuator networks, smart grids, and social networks—can be effectively represented as graphs, where exploiting relational dependencies is key. I investigate methods that relax common simplifying assumptions in graph learning, aiming to enhance effectiveness, applicability, and transferability to real-world systems.

These domains generate large, structured, and uncertain data, requiring solutions with robust data-handling capabilities, resilience to concept drift, self-awareness for fault diagnosis, self-healing mechanisms, and support for remote controllability and reconfigurability. My approach emphasizes avoiding overly restrictive mathematical assumptions while maintaining strong integration between theory, implementation, and deployment.

I combine foundational research in machine learning with embedded systems engineering to develop a new generation of intelligent systems characterized by autonomous decision-making, adaptation, and self-repair capabilities. Current work addresses learning in non-stationary and evolving environments, graph-structured data, and intelligent embedded platforms, with projects spanning both academic and industrial collaborations.

A Research Overview follows.

Adaptive Intelligence in Systems

The research develops learning machines embedding adaptive mechanisms to handle changes in non-stationary environments, whether affecting the environment itself or interactions between sensors and the environment. Current efforts include nonparametric change detection for graph-based data streams, Riemannian graph embeddings, and adversarially controlled deep learning architectures. I focus on mechanisms that allow systems to react precisely when needed, with applications in explosive and drug detection, molecular explosive identification, photovoltaic energy harvesting, laser welding and cutting, manufacturing quality analysis and prognostic.

Intelligence in Embedded Systems

This research addresses intelligent cyber-physical embedded systems, including wireless sensor networks, IoT platforms, smart grids, and hybrid monitoring systems, which integrate computational intelligence to learn from incoming sensor data. Key areas include energy-aware design, energy harvesting, adaptive sampling, and dynamic data accuracy management. Real-world deployments include sustainable wireless monitoring for marine environments (Queensland, Australia; Fiji Islands) and rockfall/landslide monitoring in Italy and Switzerland. Studies focus on intelligent power management, remote reconfigurability, secure data handling, and effective data visualization.

Graph Deep Learning

Graph Deep Learning is central to my research, leveraging functional dependencies in graph-structured data. Key directions include: structural graph learning for evolving topologies; spatiotemporal graph neural networks for predictive modeling and anomaly detection in space-time data; continual learning for adaptive processing in dynamic graph environments; and graph-based reinforcement learning to exploit relational dependencies for control and decision-making. These approaches integrate with adaptive and embedded systems research to deliver intelligent, resilient, and practical solutions e.g., those involving hearth atrial fibrillation, weather forecast, sustainable energy production and power consumption forecasting in smart cities.

Application-Level Analysis, Synthesis, and Diagnosis of Embedded Systems

I investigate the application-level properties of embedded systems and their relationships with low-level design. Using machine learning and randomized algorithm frameworks, I develop methodologies for analysis, synthesis, and diagnosis that quantify robustness and sensitivity, provide design guidelines, and detect, identify, and isolate faults. This work contributes to the theory of probably approximately correct computation for embedded systems operating in uncertain and perturbed environments.

AWARDS AND RECOGNITIONS

- International Neural Networks Society Fellow, 2024
- 2024 Enrique Ruspini Meritorious Service Award, “For dedicated services to the enhancement of educational and other international activities of the IEEE Computational Intelligence Society”, 2023
- Caianiello ICIAP Paper Award, for paper "Hashing for Structure-based Anomaly Detection", F.Leveni, L.Magri, C.Alippi, G.Boracchi, in International Conference on Image Analysis and Processing, 2023.
- Asia-Pacific Artificial Intelligence Association (AAIA) Fellow, 2023
- ELLIS Fellow, Geometric Deep Learning program, 2021
- 2018 IEEE CIS *Outstanding Computational Intelligence Magazine Award* for the paper *Adaptive Strategies for Learning in Nonstationary Environments: a Survey*, by G. Ditzler, M. Roveri, C. Alippi, R. Polikar, IEEE Computational Intelligence Magazine, vol. 10, no. 4, pp. 12-25, 2015
- 2016 International Neural Network Society *Gabor award*, recognizing achievements in engineering and applications of neural networks
- 2016 IEEE CIS *Outstanding Transactions on Neural Networks and Learning Systems Paper award* for the paper titled “Just-in-Time Classifiers for Recurrent Concepts” by C.Alippi, G.Boracchi, M.Roveri, IEEE TNLS, 2013.
- *Distinguished Lecturer* of the IEEE Computational Intelligence Society, 2014-2016 term.
- *IBM Faculty Award*, 2013
- IEEE Fellow, “for contributions to robustness and application-level synthesis of embedded information processing systems”, 2006
- 2003 IEEE Instrumentation and Measurement Society *Outstanding Young Engineer Award* “In recognition of his leadership in the fields of digital architectural design and neural networks for industrial applications.”
- IEEE Senior Member, “for contributions to robustness and application-level synthesis of embedded information processing systems”, 1999

Plaques

- *Plaque of appreciation* from the IEEE Computational Intelligence Society in recognition of his leadership and service as General Program Chair, 2014 IEEE Symposium Series on Computational Intelligence SSCI 2014, Orlando, USA, 2014.
- *Plaque of appreciation* from the IEEE Computational Intelligence Society in recognition of his leadership and service as Program Chair, 2014 IEEE International Joint Conference on Neural Networks IJCNN 2014, Beijing, China, 2014.
- *Plaque of appreciation* from the IEEE Computational Intelligence Society in recognition of his leadership and service as General Chair, 2012 IEEE International Joint Conference on Neural Networks IJCNN 2012, Brisbane, Australia, 2012.

- *Outstanding service award Plaque* as Program co-Chair of IEEE IJCNN11, San Jose', USA, 2011.

Many certificates of appreciation from IEEE for dedication and service to the IEEE Computational Intelligence Society as *Chair of the IEEE CIS Awards Committee, Administrative Committee member, Chair of the Summer Schools committee, Executive Committee member, Vice President for Education; Associate Editor of the IEEE Transactions on Neural Networks; Chair of the IEEE Neural Networks Technical Committee.*

INVOLVEMENT IN NATIONAL ORGANIZATIONS

- Member of the Steering Committee of the National Interuniversity Consortium for Computer Science (CINI), representing Politecnico di Milano, 2018–2021.
- Member of the MIUR-CNR Steering Committee for the national PhD program in the field of Artificial Intelligence.
- Member of the advisory and coordination group of the Department for Higher Education and Research for the new National Research Plan (PNR), contributing to national proposals and strategies, and for Horizon Europe 2021–2027, on “Artificial Intelligence, Cybersecurity, and Robotics.”
- Member of the Steering Committee of the National Interuniversity Consortium for Computer Science (CINI), representing Politecnico di Milano, 2016–2018.

INVOLVEMENT IN INTERNATIONAL ORGANIZATIONS

- *Member* of the Board of Governors of the International Neural Network Society (INNS), 2022-2023
- Maria de Maeztu Advisory Board member, Institut de Robotica i Informatica Industrial, Universidad Politecnica de Catalunya; Barcelona, Spain, 2019-2021
- *Member* of the Administrative Committee (AdCom) of the IEEE Computational Intelligence Society (CIS), 2020-2022
- *Member* of the Administrative Committee (AdCom) of the IEEE Computational Intelligence Society (CIS), 2017-2019
- *Member* of the Board of Governors of the International Neural Network Society (INNS), 2015-2021
- *Member* of the Board of the executive Committee of the European Neural Network Society (ENNS), 2010-2019
- *Founding Member* of the Società Accademici Italiani in Svizzera, 2018-
- *Vice-President for Education* of the IEEE Computational Intelligence Society (CIS), 2015-2016
- *Vice-President for Education* of the IEEE Computational Intelligence Society (CIS), 2013-2014
- *Member* of the Administrative Committee (AdCom) of the IEEE Computational Intelligence Society (CIS), 2012-2014
- *Chair* of the IEEE Computational Intelligence Society (CIS) Awards Committee (2019, 2020)
- *Chair* of the IEEE Computational Intelligence Society (CIS) Awards Committee (2012)
- *Co-Editor in Chief*, (Chinese Association for Artificial Intelligence) *CAAI Transactions on Intelligence Technology*, Elsevier (2016-)
- *Advisory Board member*, (Springer) *Evolving Systems Journal* (2020-)

- *Advisory Board member*, International Journal on Intelligent Information Science and Systems, Springer (2016-)
- Advisory Board member, Hybrid Intelligence, Inderscience enterprise (2019-)
- *Member* of the IEEE Frank Ronsenblatt award committee (2011-2013)
- *Editorial Board Member*, Proceedings of the IEEE, 2025-2027
- *Associate Editor*, Neural Networks, (2016-2017)
- *Associate Editor*, IEEE Computational Intelligence Magazine (2010-2014)
- *Associate Editor*, IEEE-Transactions on Neural Networks (2004-2012)
- *Guest Associate Editor*, IEEE-Transactions Neural Networks & Learning Systems (2012-13)
- Guest Editor for the Special Issue, New Applications of Data-driven Performance Optimization and Safety Assessment for Large-scale Systems in *Control Engineering Practice* (2024)
- *Associate Editor*, IEEE-Transactions on Instrumentation and Measurements (2003-2010)
- *Associate Editor*, (Springer) Evolving Systems Journal (2014-2019)
- *Associate Editor*, (Springer & Science China) Science China: Information Sciences Journal (2011-)
- *Associate Editor*, IEEE/CAA Journal of Automatica Sinica (JAS), (2014-)
- *Associate Editor*, IEEE Transactions on Emerging Topics in Computational Intelligence, (2016-2017)
- *Associate Editor*, (Online) International Journal on Smart Sensing and Intelligent Systems (2008-)
- *Chair* of the IEEE Technical Committee on Neural Networks of the IEEE Computational Intelligence Society (2008-2010)
- *Co-Chair* of the Technical Committee TC-22 Intelligent Measurement Systems of the IEEE Instrumentation and Measurement Society (2004-2009)
- *Chair* of the IEEE Computational Intelligence Society (CIS) Research grant sub-committee (2011)
- *Member* of the sub-committee of the IEEE Computational Intelligence Society for the outstanding Early Career Award (2011)
- *Member* of the IEEE Computational Intelligence Society Finance Committee (2009-2013)
- *Member* of the IEEE Technical Committee on Neural Networks of the IEEE Computational Intelligence Society (2011-2013)
- *Member* of the IEEE Technical Committee on Intelligent Systems and Applications of the IEEE Computational Intelligence Society (2010-2013)
- *Member* of the IEEE Computational Intelligence Society awards committee (2009-2010)
- *Member* of the CIS Students grant 2009
- *Vice-Chair* of the IEEE Technical Committee on Neural Networks of the IEEE Computational Intelligence Society (2007-2008)
- *Vice-Chair* of the EU COST Action IC0806 –Intelligent Monitoring, Control and Security of Critical Infrastructure Systems (since 2009-2013)
- *Voting representative* of the IEEE I&M Society in the Administrative Committee of the IEEE Neural Networks Society 2003-2004

Conference activity (Only recent and relevant)

- *General Chair*: ACAIT 2026(Chongqing, China), ACAIT 2025(Hohhot, China), ICAISM25 (Chongqing, China), ACAIT 2024(Fuzhou, China), ACAIT 2023(Quzhou, China), ICCR 2022 (Guangzhou, China), ACAIT2022 (Changzhou, China), AIAT 2022 (Guangzhou, China), IEEE ACAIT 2021(Haikou, China), ICIC2016 (Lanzhou, China); IEEE ICIST 2015 (Changsha, China), IEEE SSCI15-IES (Orlando, USA); ICICIP 2013 (Beijing, China); IEEE International Joint Conference on Neural networks 2012 (one of the major events in the neural networks field, Brisbane, AUS); IEEE HAVE 2009 (Lecco, Italy); IEEE ROSE 2009 (Lecco, Italy); IEEE CIMS 2009 (Hong Kong, HK);
- *General Program Chair*: IEEE SSCI 2014 (Orlando, USA)
- *Program Chair*: IEEE ICKG2025, (Limassol, Cyprus), IJCNN 2014 (one of the major events in the field in the Neural Networks field, Beijing, China), Beijing; ISNN 2011 (Guilin, China), ICANN 2009 (the major European Neural Networks event, Limassol, Cyprus);
- *Program Co-Chair*: ICDS2024 (Marrakech, Morocco), IEEE ICDS2020 (Fez, Morocco); IEEE IJCNN 2011 (one of the major events in the neural networks field, San Jose', USA); IEEE IMS 2005 (Orlando, USA);
- *Regional chair*: WCICA 2016 (Guilin, China), ICONIP 2017 (Guangzhou, China)
- *Conflict of Interest paper Chair*: World congress on Computational Intelligence 2016 (Vancouver, Canada)
- *Plenary Chair*: IEEE WCCI2020 (Glasgow, UK), IJCNN17 (Anchorage, USA), ISNN 2012 (Shenyang, China)
- *Special Session Chair*, IEEE WCCI2018 (Rio de Janeiro, Brazil)
- *Keynotes/plenaries*: ICEEMT 2025 (Shenzhen, China), IEEE ICDS24 (Marrakech, Morocco), DACH+ Conference on Energy Informatics (Lugano, 2024), ACAIT (Quzhou, 2023), ML4ITS workshop at ECML 2021, IEEE CIS Madras Chapter International Workshop (Madras, India), 2021, HDS20 (Shiga, Japan), IEEE ICDS20 (Fez, Morocco), IEEE DDCLS2019 (Dali, China), ICSD2019 (Marrakech, Morocco), KIOS 19 (distinguished lecture at the center, Nicosia, Cipro), AIAIM2019 (Doha, Qatar), ICONIP18 (Invited talk, Siem Reap, Cambodia), ICACI17 (Doha, Qatar), ICAISC17 (Zakopane, Poland), LA-CCI16 (Cartagena, Colombia), ICRCICN16 (Kolkata, India), WCICA16 (Guilin, China), IJCNN15 (invited talk, Killarney, Ireland); WIRN15 (Vietri, Italy); IJCCI14 (Rome, Italy); IDEAL14 (Salamanca, Spain); ICATET14 (Jaipur, India); BICS13 (Beijing, China), ISNN13 (Dalian, China), M2M 2012 (Taipei, Taiwan), IWACI 2010 (Suzhou, China); IEEE ICST 2009 (Tainan, Taiwan); IEEE ROSE 2007 (Ottawa, Canada);
- *Steering or Advisory board Committee*: ISNN 2010; IEEE CIMS 2005-2012, IEEE CIVEMSA 20013-, FANCO15, IEEE WCI15 (Kanpur, India), IEEE ICRCICN 2016 (Kolkata, India), IEEE ICCI-2017 (Kanpur, India), ICSD2017 (Meknes, Morocco), IEEE ICIET-2017 (Jaipur, India), ICRITETR-(Jaipur, India), ICANN18 (Rhodes, Greece), IEEE ICRCICN 2018 (Kolkata, India), ISSIP 2018 (Kolkata, India), AIAIM2019 (Doha, Qatar), ICRTIEST 2019 (Jaipur, India), ISCM20 (Stockholm, Sweden)
- *Summit Chair*, IEEE Smart World Congress (San Francisco, USA), 2017
- *Regional chair*: WCICA 2016 (Guilin, China)
- *Program Committee member*: tens of events

Alippi has organised several special sessions and workshops in IEEE international conferences (e.g., IEEE ISCAS, IEEE-INNS IJCNN, IEEE IMTC, IEEE SSCI)

SOME FIGURES

MONOGRAPHS: 1 (SINGLE AUTHOR; ENGLISH AND CHINESE LANGUAGES)

PATENTS: 9+1 REGISTERED

INTERNATIONAL JOURNALS: 99

NATURE: 2 (SCIENTIFIC REPORTS)

IEEE TRANSACTIONS: 54 (5 AS A SINGLE AUTHOR)

TNN(LS) 19, TIM 8, TCAS 5, TSMC 4, TCyB 3, TCAD 2, TC 3, TPAMI 2, TVLS 1, TCPM 1, TNS 1, SEN 1, SYS1, TMC 1, TETCI 1, TSP 1)

ACM: 2 (TOSN 1, TODES 1 COMP-SURVEYS 1)

IEEE MAGAZINES: 10

(I&M 5; CIM 2; COMPUTERS 2, COMMUNICATIONS 1)

NEURAL NETWORKS: 1

NEUROCOMPUTING: 3

JMLR: 2

OTHERS: 21

EDITED BOOKS AND BOOK CHAPTERS

EDITED BOOKS: 7

BOOK CHAPTERS: 13

GUEST EDITOR, SPECIAL ISSUES 6

(IEEE TIM, NEURAL NETWORKS, IEEE TNNLS, NEUROCOMPUTING,

COMPUTATIONAL INTELLIGENCE MAGAZINE)

CONFERENCE/WORKSHOP PAPERS: 140+ INCLUDING 10 ICML PAPERS, 4 ICLR, 7 NEURIPS, 2

AAAI + OTHER TOP CONFERENCES IN OTHER AREAS

FUNDING: ALIPPI COORDINATED PROJECTS FOR MORE THAN 6.000.000 EUROS

TEACHING ACTIVITY

Alippi has taught tens of courses in Computer Sciences at Politecnico di Milano, e.g., “Fundamentals of Computer Sciences”, “Information Processing systems”, “Intelligent Embedded Systems” both at undergraduated and graduated levels. At Università della Svizzera italiana, Alippi has taught the courses “Optimizing embedded applications”, “Cyber-physical systems-Intelligence”, “Machine learning”, “Advanced topics in Machine Learning”, “Graph Deep Learning”.

My PhD student Andrea Cini won the *Informatics Europe Best PhD Dissertation Award*, 2025.

SELECTED PUBLICATIONS

MONOGRAPH

C.Alippi, Intelligence for Embedded Systems: a Methodological approach, Springer, 2014, pp. 283
the book has been translated in Chinese in 2020

EDITED BOOKS

R.Kozma, C.Alippi, Y.Choe, F.Morabito, *Artificial Intelligence in the Age of Neural Networks and Brain Computing*, Elsevier, 2018, 2024

C.Alippi, M.Polycarpou, Handbook on Computational Intelligence, Part D: Neural Networks, Springer, 2015

D. Liu, C. Alippi, D. Zhao, H. Zhang, Frontiers of Intelligent Control and Information Processing, World Scientific Publishing, Singapore, 2014

Liu, D.; Alippi, C.; Zhao, D.; Hussain, A. (Eds.), *Advances in Brain Inspired Cognitive Systems*, Vol. 7888, 6th International Conference, BICS 2013 Beijing, China, June 9-11, Proceedings, Springer 2013

J.Liu, C.Alippi, B. Bouchon-Meunier, G. W. Greenwood, H. A. Abbass, *Advances in Computational Intelligence*, Vol. 7311, Edited book of the *plenary/invited lectures* delivered at the IEEE World Congress on Computational Intelligence WCCI 2012, Brisbane, Australia, June 2012, Springer 2012

D. Liu, H. Zhang, M. Polycarpou, C. Alippi, and H. He, Editors, *Advances in Neural Networks - ISNN2011*, Berlin: Springer, 2011, 3 Volumes

C.Alippi, M.M. Polycarpou, C.Panayiotou, G.Ellinas, Editors, *Artificial Neural Networks -ICANN 2009*, Springer 2009, 2 Volumes

INTERNATIONAL TOP JOURNALS (co-authored papers, Selection)

J. Kong, H. Li, B.Zhao, C.Alippi, Prescribed-Performance Control of Variable-Order Fractional-Order Nonlinear Systems Through Adaptive Dynamic Programming, IEEE Transactions on Cybernetics, 2026

C.Alippi, D.Zambon, Assessment of Spatio-Temporal Predictors in the Presence of Missing and Heterogeneous Data, Neurocomputing 2026

F.Leveni, L.Magri, C.Alippi, G.Boracchi, Preference Isolation Forest for Structure-based Anomaly Detection, Pattern Recognition, 2025

X.Rao, B.Zhao, D.Liu, C.Alippi, FX-DARTS: Designing Topology-unconstrained Architectures with Differentiable Architecture Search and Entropy-based Super-network Shrinking, IEEE Transactions on Neural Networks and learning systems, 2025

A. Cini, I. Marisca, D. Zambon, C. Alippi, Graph Deep Learning for Time Series Forecasting, ACM Computing Surveys, 2025

L.Butera, G.De Felice, A.Cini, C.Alippi, On the Regularization of Learnable Embeddings for Time Series Forecasting, Transactions on Machine Learning Research, 2025

T.Marzi, A.Cini, C.Alippi, Feudal Graph Reinforcement Learning, Transactions on Machine Learning Research, 2024

Butera L., Cini A., Ferrante A., Alippi C. Object-Centric Relational Representations for Image Generation, Transactions on Machine Learning Research, 2024.

M.Jin, H.Y. Koh, Q. Wen, D. Zambon, C. Alippi, G.I. Webb, I. King, S. Pan, A Survey on Graph Neural Networks for Time Series: Forecasting, Classification, Imputation, and Anomaly Detection, TPAMI, 2024

A.Cini, D.Zambon, C. Alippi. Sparse Graph Learning from Spatiotemporal Time Series, JMLR, 2023

N.A. Efkarpidis, S. Imoscopi, M. Geid, A. Cini, S. Lukovic, C. Alippi, I.Herbst . Peak shaving in distribution networks using stationary energy storage systems: A Swiss case study, Sustainable Energy, Grids and Networks, 2023

B.Zhao, S.Zhang, D.Liu, Derong, C.Alippi, Y. Zhang, Event-Triggered Robust Control for Multi-player Nonzero-Sum Games with Input Constraints and Mismatched Uncertainties, is acceptable for publication in International Journal of Robust and Nonlinear Control, 2022

L.Ferretti, A.Cini, G.Zacharopoulos, C.Alippi, L. Pozzi, Graph Neural Networks for High-Level Synthesis Design Space Exploration, ACM Transactions on Design Automation of Electronic Systems, pp, 1-20, 2022

H.Chen, Z. Liu, C. Alippi, B. Huang, D. Liu, “Explainable Intelligent Fault Diagnosis for Nonlinear Dynamic Systems: From Unsupervised to Supervised Learning”, IEEE Transactions on Neural Networks and Learning Systems, pp 1-15, 2022

L.Magri, D.Rutigliano, P.Invernizzi, E.Sozio, C.Alippi, S.Binetti, G.Boracchi Known and Unknown Event Detection in OTDR Traces by Deep Learning Networks, Neural Computing and Applications, 2022

D.Grattarola, D.Zambon, F.Bianchi, C.Alippi, "Understanding Pooling in Graph Neural Networks", IEEE Transactions on Neural Networks and Learning Systems, pp 1-11, 2022

D. Grattarola, L. Livi, C. Alippi, R. Wennberg, T. Valiante, Seizure localisation with attention-based graph neural networks, Expert Systems with Applications, 2022

C. D'Eramo, A. Cini, A. Nuara, M. Pirota, C.Alippi, J. Peters, M.Restelli, Gaussian Approximation for Bias Reduction in Q-Learning, Journal Machine Learning Research (JMLR), 2021

L. Butera, A.Ferrante, M.Jermini, Mauro, M. Prevostini, C.Alippi, Precise Agriculture: Effective Deep Learning Strategies to Detect Pest Insects, IEEE/CAA Journal of Automatica Sinica, 2021.

G.Canonaco, M.Roveri, C.Alippi, F. Podenzani, A.Bennardo, M. Conti, N.Mancini, A Transfer-Learning Approach for Corrosion Prediction in Pipeline Infrastructures", Applied Intelligence, 2021.

P.Verzelli, L.Livi, C.Alippi, Learn to Synchronize, Synchronize to Learn, Chaos: An Interdisciplinary Journal of Nonlinear Science, 2021

A.Gasparin, S.Lukovic, C.Alippi, Deep Learning for Time Series Forecasting: The Electric Load Case, CAAI Transactions on Intelligence Technology, 2021

S. Disabato, M. Roveri, C.Alippi, Distributed Deep Convolutional Neural Networks for the Internet-of-Things, IEEE Transactions on Computers, 2021

P.Verzelli, C.Alippi, L.Livi, P.Tino, Input-to-state representation in linear reservoirs dynamics, IEEE Transactions on Neural Networks and Learning Systems (2021).

F.M. Bianchi, D. Grattarola, L. Livi, C.Alippi, Graph Neural Networks with Convolutional ARMA Filters, IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021

F.Bianchi, D.Grattarola, L.Livi, C.Alippi, Hierarchical Representation Learning in Graph Neural Networks with Node Decimation Pooling, IEEE TNNLS, accepted December 2020

D.Grattarola, C.Alippi, Graph Neural Networks in TensorFlow and Keras with Spektral, IEEE Computational intelligence magazine, 2020

H.Lin, B.Zhao, D.Liu, C.Alippi, Data-based Fault Tolerant Control for Affine Nonlinear Systems through Particle Swarm Optimized Neural Networks, IEEE/CAA Journal of Automatica Sinica, 2020

B. Zhao, D.Liu, C.Alippi, Sliding Mode Surface-Based Approximate Optimal Control for Uncertain Nonlinear Systems with Asymptotically Stable Critic Structure, IEEE Transactions on Cybernetics, December 2019

D. Zambon, C. Alippi, L. Livi, Change point methods on a sequence of graphs, IEEE Transactions on Signal Processing, Vol.67, No.4, pp. 6327-6341, December 2019 [10.1109/TSP.2019.2953596](https://doi.org/10.1109/TSP.2019.2953596).

P. Verzelli, C. Alippi, Lorenzo Livi, Echo State Networks with Self-Normalizing Activations on the Hyper-Sphere, Nature-Scientific reports, 2019

D. Grattarola, D. Zambon, L.Livi and C. Alippi, Change Detection in Graph Streams by Learning Graph Embeddings on Constant-Curvature Manifolds , IEEE Transactions on Neural Networks and Learning Systems, Vol. 31, No. 6, pp. 1856-1869, June 2020 arXiv:1805.07113, 2019.

D.Grattarola, L.Livi, C.Alippi, Adversarial Autoencoders with Constant-Curvature Latent Manifolds, Applied Soft Computing, 2019.

D.Zambon, C.Alippi, L.Livi, Concept Drift and Anomaly Detection in Graph Streams, IEEE Transactions on Neural Networks and Learning Systems, Vol.29, No. 9, pp. 5592 - 5605, 9 March 2018 DOI [10.1109/TNNLS.2018.2804443](https://doi.org/10.1109/TNNLS.2018.2804443)

A. Dal Pozzolo, G.Boracchi, O.Caen, C. Alippi, G.Bontempi, *Credit Card Fraud Detection: a Realistic Modeling and a Novel Learning Strategy*, IEEE Transactions on Neural Networks and Learning Systems, Vol 29. No. 8, August 2018, pp.3784-3797 [10.1109/TNNLS.2017.2736643](https://doi.org/10.1109/TNNLS.2017.2736643)

L.Bu, D.Zhao, C.Alippi, *An Incremental Change Detection Test Based on Density Difference Estimation*, IEEE Transactions on Systems, Man and Cybernetics: Systems, pp 2714 – 2726, Vol 47, No 10, 2017

L.Livi, C. Alippi, *One-class classifiers based on entropic spanning graphs*, IEEE Transactions on Neural Networks and Learning Systems, Vol 28, No 12, pp 2846-2858. 2017

F.M.Bianchi, L.Livi, C.Alippi, R.Jenssen, Multiplex visibility graphs to investigate recurrent neural networks dynamics, Nature-Scientific reports, Vol.7, pp.44037-44049, 2017

C. Alippi, G. Boracchi, M. Roveri, *Hierarchical Change-Detection Tests*, IEEE Transactions on Neural Networks and Learning Systems, Vol. 28, No. 2, pp 246–258, 2017. DOI 10.1109/TNNLS.2015.2512714, 2016, pp.1-13

C.Alippi, S.Ntalampiras, M.Roveri, *Model-free fault detection and isolation in large-scale cyber-physical systems*, IEEE Transactions on Emerging Topics in Computational Intelligence, Vol 1.No1. Feb, 2017, pp. 61-71

C.Alippi, M.Roveri, *The (not) far away path from smart cyber-physical systems: an information-centric framework*, IEEE Computers Magazine, April 2017, pp. 1-9

L.Livi, F.M.Bianchi, C.Alippi, *Determination of the edge of criticality in echo state networks through Fisher information maximization*, IEEE Transactions on Neural Networks and Learning Systems, Vol 29, No. 3, 2017, pp. 707-717

F.M.Bianchi, L.Livi, C.Alippi, *Investigating echo state networks dynamics by means of recurrence analysis*, IEEE Transactions on Neural Networks and Learning Systems, Vo 29, No 2, 2018, pp 427-439

L. Bo, C.Alippi, D.Zhao, *A Pdf-free Change Detection Test Based on Density Difference Estimation*, IEEE Transactions on Neural Networks and Learning Systems, Vol 29, No 2, 2018, pp 324-334

S.B. Gee, K.C. Tan, C. Alippi, *Solving Multiobjective Optimization Problems in Unknown Dynamic Environments: An Inverse Modeling Approach*, IEEE Transactions on Cybernetics, Vol 47, No 2, 2017, pp. 4223-4234

M. A. Cugueró-Escofet, J. Quevedo, C. Alippi, M. Roveri, V. Puig, D. García, F. Trovò, *Model- vs. data-based approaches applied to fault diagnosis in potable water supply networks*, Journal of Hydroinformatics, 2016

C.Alippi, R.Fantacci, D.Marabissi, M.Roveri, *A Cloud to the Ground: The New Frontier of Intelligent and Autonomous Networks of Things*, IEEE Communications Magazine, Vol.54, No 12, pp. 14-20, December 2016

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