

ALESSANDRO RIZZO

- CONTACT INFORMATION Dipartimento di Elettronica e Telecomunicazioni
Politecnico di Torino
Corso Duca degli Abruzzi 24, 10129 Torino TO, Italy
Phone +39 011 090 7251
Email alessandro.rizzo@polito.it
Web csl.polito.it
engineering.nyu.edu/people/alessandro-rizzo
- PRESENT APPOINTMENTS **Tenured Associate Professor** in the Department of Electronics and Telecommunications, Politecnico di Torino, Turin, Italy (October 30, 2015 to present)
Visiting Full Professor in the Office of Innovation, New York University Tandon School of Engineering (January 15, 2016 to present)
- EDUCATION **Università degli Studi di Catania, Catania, Italy**
Ph.D. in Electronic and Automation Engineering, February 2000
• Dissertation: “An Intelligent System for the Fault Diagnosis and Data Validation in the JET Machine”
• Advisor: Luigi Fortuna
• Final Grade: Excellent
Università degli Studi di Catania, Catania, Italy
“Laurea” degree (5 years) in Computer Engineering, April 1996
• Thesis: “Obstacles and Joint Limits Avoidance in Visual Servoing for Robotics”
• Advisors: Lorenzo Vita (University of Catania, Italy) and François Chaumette (IRISA/INRIA - Rennes, France)
• Final Grade: 110/110 summa cum laude
- RESEARCH INTERESTS Complex networks and systems, Epidemic modeling, Cooperative robotics and path planning, Collective behavior, Mobility systems, Urban systems, Smart and Automated Systems, Control Systems, Dynamical system theory, Mechatronics.
- TEACHING INTERESTS Complex systems and networks, robotics, dynamical systems theory, automatic controls, measurements, optimization.

HONORS AND AWARDS

Paper "High-Resolution Agent-Based Modeling of COVID-19 Spreading in a Small Town" is a top-cited paper in *Advanced Theory and Simulations*

Paper "Modelling and predicting the effect of social distancing and travel restrictions on COVID-19 spreading" among the top five most highly cited in the *Journal of the Royal Society Interface*

Finalist for the best presentation award at the National Conference of Italian Professors and Researchers in Automation (SIDRA 2021) - Five finalists out of about 150 presentations

Selection of the chapter "Toward a Realistic Modeling of Epidemic Spreading with Activity Driven Networks" to belong to COVID-19 related studies and deposit as a freely available resource on PubMedCentral as well as World Health Organization to help worldwide researchers currently working on the COVID-19 Pandemic.

Highlight of the paper "Effect of individual behavior on epidemic spreading in activity-driven networks" in the online magazine *Physics - Spotlighting Exceptional Research* (American Physical Society), October 2014.

Scholarship of the Honors Center of Italian Universities (H2CU) for Visiting Professorship at the Department of Mechanical and Aerospace Engineering, New York University Polytechnic School of Engineering, from 2012 to 2015.

Top 50% most read Springer eBooks, 2012.

Award for the best presentation given by the Italian Association of the Professors and Researchers in Automation Engineering at the Italian Congress "Automatica 2012", 2012.

IMACS Honor Member (International Association for Mathematics and Computers in Simulation), 2010.

The 10 most read articles on *Mathematics and Computers in Simulation* (Elsevier), 2009.

Invited speaker at the European Commission, DG Information Society and Media, Third Monitoring and Control Concertation Week, Concertation Meeting on Control of Large-Scale Systems, Bruxelles. Keynote Presentation on "Complex Systems: from Science to Technology", 2009.

IEEE Senior Member, 2008.

IEEE Distinguished Lecturer, Nuclear and Plasma Science Society, 2007-present.

Award Winning Application Paper at the IFAC Triennial World Congress, Barcelona, Spain, 2002.

Best Paper Award at the SOCO/ISFI 2001 Fourth International ICSC Symposium on Soft Computing an Intelligent Systems for Industry, Paisley, Scotland, UK, 2001.

European Community ERASMUS Scholarship for research activity and preparation of the “Laurea” Degree Thesis at IRISA/INRIA (Rennes, France), 1996.

RESEARCH FUNDING

ONGOING

2022-present - European Union Next-Generation EU (Piano Nazionale di Ripresa e Resilienza) - “MOST - Sustainable Mobility National Research Center” - Research Project - Work Package senior personnel “Sustainable design and social acceptance for urban air mobility with demonstrator” (Responsible of a budget of €206k)

2022-present - European Union Next-Generation EU (Piano Nazionale di Ripresa e Resilienza) - “FAIR - Future Artificial Intelligence Research” - Research Project - Work package Leader “Intelligent systems, autonomous robots and interaction in extreme computational frameworks” (€793k)

2022 - Amazon Research Award - “Physics-Informed Machine Learning for Trustworthy Control of Autonomous Robots” - Research Project (PI - \$87.5)

2022 - Leonardo (former Finmeccanica) - “AI Techniques for modeling and control of a fleet of autonomous vehicles” - Research Contract (co-PI - € 200k)

2021 - Italian Spatial Agency - “Advanced Systems for Autonomous Navigation in Spatial Explorations” (SINAV) - Research Project (co-PI - € 550k)

2020 - present - TIM (Telecom Italia) - “Connected autonomous mobile robots (AMR): coordination in outdoor environments” - Research Contract (PI - € 100k)

2017-present - Politecnico di Torino - Interdepartmental Research Center for Service Robotics *PIC4Ser* - Internal funding (founder and member of the technical board - 1.2M€)

COMPLETED

2021 - Leonardo (former Finmeccanica) - “Autonomy manager for mixed teams of manned and unmanned aerial vehicles” - Research Contract (co-PI - € 100k)

2020-2022 - National Science Foundation, Division of Civil, Mechanical, and Manufacturing Engineering, RAPID call on COVID-19, “RAPID/Collaborative Research: Agent-based Modeling Toward Effective Testing and Contact-tracing During the COVID-19 Pandemic” - (consultant - USD 161k)

2019 - Amazon Research Award - “AI-based Risk-aware navigation of UASs in urban environments” - (PI - USD 100k)

2018-2022 - Compagnia di San Paolo - one Ph.D. fellowship awarded for the project “Hacking a complex world: unraveling the mechanisms underlying complex social and technological phenomena” in collaboration with the New York University Tandon School of Engineering (Brooklyn NY), within the call “Joint research projects with top universities” (PI - EUR 100k)

2018-2021 - Italian Ministry of Foreign Affairs and International Cooperation - Seventh Call for Proposals on Scientific and Technological Cooperation - “Macro to Micro: uncovering the hidden mechanisms driving network dynamics” - Joint Research Proposal with Bar-Ilan University (PIs Alessandro Rizzo and Baruch Barzel - EUR 400k)

2018 - TIM (Telecom Italia) - “Connected drone: Cloud-based framework for multilayer planning” - Research Contract (PI -EUR 50k)

2017 - MIT International Science and Technology Initiative (MISTI) - “Systems and Data Science to Design, Optimize, and Control Mobility on Demand Systems” - Mobility grant (PI - \$20k)

2017 - MIT International Science and Technology Initiative (MISTI) - “Exploiting the 3rd Mobility Dimension for Smart City Applications” - Mobility grant (co-PI - \$20k)

2017 - Office of Naval Research Global, Visiting Scientists Program, travel grant to visit the SPAWAR Systems Center Pacific, San Diego, CA, to develop joint research opportunities (PI - EUR 3k)

2017 - TIM (Telecom Italia) - "Connected Drone: Cloud-based Framework of risk-aware intelligent navigation" - Research Contract (PI - \$50k)

2016 - Siebel Energy Institute, "Multi-modal crowd sensing to monitor buildings in smart cities", Seed Grant Proposal (PI - \$50k)

2016 - Leonardo S.p.a. (Avionics and Aerospace Systems Division "SAS"), Rome, Italy, Industrial research contract on "Smart Decision Module to Enhance Autonomous Navigation of UAVs" (co-PI - €115k)

2016 - Compagnia di San Paolo, Torino, Italy, "Starting grant to attract excellent professors" (PI - €100k)

2015-2020 - National Science Foundation, Sensors, Dynamics and Control program, "Network-based Modeling of Infectious Disease Epidemics in a Mobile Population: Strengthening Preparedness and Containment" (1/1 Senior personnel - \$407k)

2013-2015 Operational National Program for Research and Innovation (PONREC), "Renewable energy and smart grids" (Senior personnel, EUR 2M)

2012 - Politecnico di Bari, individual research grant, "Distributed estimation on asynchronous sensor networks" (PI - EUR 15k)

2011 - Politecnico di Bari, individual research grant, "Distributed estimation on sensor networks" (PI - EUR 15k)

2009-2011 Framework Program of Apulia Region, Mechatronic District (Senior personnel, EUR 550k)

2006-2009 Strategic Project funded by Apulia Region on "Telecommunication infrastructures and wireless sensor networks in the management of emergency", (Senior personnel, EUR 600k)

2006 Explorative Project funded by Apulia Region on "Novel decision support systems for planning and control of logistics and production activities of food industry" (Senior personnel, EUR 55k)

2005-2006 National Project funded by the Ministry of University on "Sensors, actuators and systems for the control of motion

based on IPMC (Ionic Polymer Metal Composites)" (Senior personnel, EUR 300k)

2004-2006 Operational National Program "PON", funded by European Community through the National Government, on "Novel injection system for heavy duty engines propelled by natural gas". In collaboration with FIAT Research Center (Senior personnel, EUR 650k)

2003-2004 National Project funded by the Ministry of University on "Bio-inspired strategies for locomotion control" (Senior personnel, EUR 240k)

2000-2001 National Project funded by the Ministry of University on "Fault detection and diagnosis, supervision and reconfiguration of control systems in industrial automation processes" (Senior personnel, EUR 280k)

1998-1999 National Project funded by the Ministry of University on "Algorithms and architectures for identification and control of industrial processes" (Senior personnel, EUR 260k)

PUBLICATIONS

Approximately 2761 citations and h-index=29 from Scopus, 5150 citations and h-index=37 from Google Scholar.

BOOKS

As author

L. Fortuna, S. Graziani, A. Rizzo, M.G. Xibilia, "Soft Sensors for Monitoring and Control of Industrial Processes", Advances in Industrial Control Series, Springer, ISBN 978-1846284793, 2007.

As editor (and author of a chapter)

A. Chiuso, L. Fortuna, M. Frasca, A. Rizzo, L. Schenato, S. Zampieri (eds.), "Modeling, Estimation and Control of Networked Complex Systems", Understanding Complex Systems Series, Springer, ISBN 978-3-642-03198-4, 2009.

JOURNAL PUBLICATIONS

1. C. Possieri, M. Frasca, A. Rizzo, "Reachability analysis in stochastic directed graphs via reinforcement learning", IEEE Transactions on Automatic Control, 68, 1, 462-469, 2023
2. G.C. Calafiore, F. Parino, L. Zino, A. Rizzo, "Dynamic planning of a two-dose vaccination campaign with uncertain supplies", European Journal of Operation Research, 304 (3), 1269-1278, 2023

3. S. Pfeiffer, V. Munaro, S. Li, A. Rizzo, G.C.H.E. de Croon, "Three-dimensional Relative Localization and Synchronized Movement with Wireless Ranging", *Swarm Intelligence*, 17, 147-172, 2023
4. A. Truszkowska, L. Zino, S. Butail, E. Caroppo, Z-P. Jiang, A. Rizzo, M. Porfiri, "Exploring a COVID-19 Endemic Scenario: High-Resolution Agent-Based Modeling of Multiple Variants", *Advanced Theory and Simulations*, 6(1), 2200481, 2023 (featured in the journal cover)
5. "The Impact of Deniers on Epidemics: A Temporal Network Model", *IEEE Control Systems Letters*, 7, 685-690, 2023
6. D. A. Burbano Lombana, L. Zino, S. Butail, E. Caroppo, Z-P. Jiang, A. Rizzo, M. Porfiri, "Activity-driven Network Modeling and Control of the Spread of Two Concurrent Epidemic Strains", *Applied Network Science*, 7, 66, 2022
7. G. Galati, S. Primatesta, S. Grammatico, S. Macri, A. Rizzo, "Game Theoretical Trajectory Planning Enhances Social Acceptability of Robots by Humans", *Scientific Reports*, 12(1), 21976, 2022
8. G. Aiello, K.P. Valavanis, A. Rizzo, "Fixed-Wing UAV Energy Efficient 3D Path Planning in Cluttered Environments", *Journal of Intelligent and Robotic Systems*, 105(3), pp. 1-13
9. A. Truszkowska, M. Fayed, S. Wei, L. Zino, S. Butail, E. Caroppo, ZP Jiang, A. Rizzo, M. Porfiri, "Urban determinants of COVID-19 spread: a comparative study across three cities in New York state", *Journal of Urban Health*, 99, 909-921, 2022
10. K. Frieswijk, L. Zino, M. Ye, A. Rizzo, M. Cao, "A Mean-field analysis of a network behavioral-epidemic model", *IEEE Control Systems Letters*, 6, 2533-2538, 2022
11. D. Gosh, M. Frasca, A. Rizzo, S. Majhi, S. Rakshit, K. Alfaro-Bittner, S. Boccaletti, "The synchronized dynamics of time-varying networks", *Physics Reports*, 949, 1-63, 2022
12. A. Truszkowska, L. Zino, S. Butail, E. Caroppo, ZP Jiang, A. Rizzo, M. Porfiri, "Predicting the effects of waning vaccine immunity against COVID-19 through high-resolution agent-based modeling", *Advanced Theory and Simulations*, 5, 6, 2100521, 2022
13. A. Centurelli, L. Arleo, A. Rizzo, S. Tolu, C. Laschi, E. Falotico, "Closed-loop dynamic control of a soft manipulator using deep reinforcement learning", *IEEE Robotics and Automation Letters*, 7(2), 4741-4748, 2022
14. F.V. Surano, M. Porfiri, A. Rizzo, "Analysis of lockdown perception in the United States during the COVID-19 pandemic", *European Physical Journal Special Topics*, special issue on Complex Urban Systems, 231, 1625-1633, 2022

15. C. Bongiorno, Y. Zhou, M. Kryven, D. Theurel, A. Rizzo, P. Santi, J. Tenenbaum, C. Ratti, "Vector-based pedestrian navigation in cities", *Nature Computational Science*, 1, 678-685, 2021
16. F. Parino, L. Zino, G. C. Calafiore, A. Rizzo, "A model predictive control approach to optimally devise a two-dose vaccination rollout: A case study on COVID-19 in Italy", *International Journal of Robust and Nonlinear Control*, special issue on Control-Theoretic Approaches for Systems in the Life Sciences, first published online on August 25, 2021, in press
17. S. Primatesta, A. Osman, A. Rizzo, "MP-RRT#: a Model Predictive Sampling-based Motion Planning Algorithm for Unmanned Aircraft Systems", *Journal of Intelligent and Robotic Systems*, 103, 2021
18. M. Ye, L. Zino, A. Rizzo, M. Cao, "Game-theoretic modeling of collective decision-making during epidemics", *Physical Review E*, 104(2), 024314, 2021
19. A. Truszkowska, M. Thakore, L. Zino, S. Butail, E. Caroppo, Z.-P. Jiang, A. Rizzo, M. Porfiri, "Designing the safe reopening of US towns through high-resolution agent-based modeling", *Advanced Theory and Simulation*, 4(9), 2100157, 2021 (featured on the journal cover)
20. B. Behring, A. Rizzo, M. Porfiri, "How adherence to public health measures shapes epidemic spreading: a temporal network model", *Chaos: an Interdisciplinary Journal on Nonlinear Science*, 31(4), 043115, 2021
21. E. Turco, V. Bo, M. Pozzi, A. Rizzo, D. Prattichizzo, "Grasp planning with a soft reconfigurable gripper exploiting embedded and environmental constraints", *IEEE Robotics and Automation Letters*, 6(3), pp. 5215-5222, 2021
22. F. Parino, L. Zino, M. Porfiri, A. Rizzo, "Modelling and predicting the effect of social distancing and travel restrictions on COVID-19 spreading", *Journal of the Royal Society Interface*, 18:20200875, February 10, 2021
23. A. Truszkowska, B. Behring, J. Hasanyan, L. Zino, S. Butail, E. Caroppo, Z.-P. Jjiang, A. Rizzo, M. Porfiri, "High-resolution agent-based modeling of COVID-19 spreading in a small town", *Advanced Theory and Simulations*, 4(3), 2000277, March 2021 (featured on the journal cover)
24. J. Hasanyan, L. Zino, A. Truszkowska, A. Rizzo, M. Porfiri, "Analysis of the Heterogeneous Vectorial Network Model of Collective Motion", *IEEE Control Systems Letters*, 5(3), 1103-1108, July 2021
25. L. Zino, A. Rizzo, M. Porfiri, "On assessing control actions for epidemic models on temporal networks", *IEEE Control Systems Letters*, 4(4), 797-802, October 2020

26. M. Nadini, L. Zino, A. Rizzo, M. Porfiri, "A multi-agent model to study epidemic spreading and vaccination strategies in an urban-like environment", *Applied Network Science*, 5, 68, September 22, 2020
27. M. Nadini, S. Richmond, J. Huang, A. Rizzo, M. Porfiri, "Design and feasibility study of the mobile application StopTheSpread", *IEEE Access*, 8, 172105-172122, September 8, 2020
28. L. Zino, A. Rizzo, M. Porfiri, "Analysis and control of epidemics in temporal networks with self-excitement and behavioral changes", *European Journal of Control*, 54, 1-11, July 2020
29. M. Nadini, A. Rizzo, M. Porfiri, "Epidemic spreading in temporal and adaptive networks with static backbone", *IEEE Transactions on Network Science and Engineering*, 7(1), 549-561, Jan-Mar 2020
30. S. Primatesta, A. Rizzo, A. la Cour-Harbo, "Ground risk map for unmanned aircraft in urban environments", *Journal of Intelligent and Robotic Systems*, 97, 489-509, 2020
31. P. Castrogiovanni, E. Fadda, G. Perboli, A. Rizzo, "Smartphone data classification technique for detecting the usage of public of private transportation modes", *IEEE Access*, 8 (58377), 2020
32. M. Nadini, A. Rizzo, M. Porfiri, "Reconstructing irreducible links in temporal networks: which tool to choose depends on the network size", accepted for publication on the *Journal of Physics: Complexity*
33. R. Barak Ventura, A. Rizzo, O. Nov, M. Porfiri, "A 3D printing approach toward targeted intervention in telerehabilitation", *Scientific Reports*, 10 (3694), 2020
34. J. Hasanyan, L. Zino, D.A. Burbano-Lombana, A. Rizzo, M. Porfiri, "Leader-Follower Consensus on Activity-Driven Networks", accepted for publication on the *Proceedings of Royal Society A*
35. L. Zino, A. Rizzo, M. Porfiri, "Consensus over Activity Driven Networks", Accepted for publication on *IEEE Transactions on Control of Network Systems*
36. F.V. Surano, C. Bongiorno, L. Zino, M. Porfiri, A. Rizzo, "Backbone Reconstruction in Temporal Networks from Epidemic Data", *Physical Review E* (100) 042306, pp. 1-11, October 15 2019
37. H. Su, C. Yang, H. Mdeihly, A. Rizzo, G. Ferrigno, E. De Momi, "Neural Network Enhanced Robot Tool Identification and Calibration for Bilateral Teleoperation", *IEEE Access*, vol. 7, pp. 122041-122051, 2019
38. M. Nadini, C. Bongiorno, A. Rizzo, M. Porfiri, "Detecting network backbones against time variations in node

- properties”, *Nonlinear Dynamics*, Vol. 99, Issue 1, pp. 855-878, January 2020
39. G. C. Calafiore, M. Ghirardi, A. Rizzo, “Robust Dynamic Traffic Assignment for Single Destination Networks under Demand and Capacity Uncertainty”, *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, early access online, July 23, 2019
40. G. C. Calafiore, C. Bongiorno, A. Rizzo, “A robust MPC approach for the rebalancing of mobility on demand systems”, *Control Engineering Practice* 90, September 2019, pp. 169-181
41. C. Bongiorno, L. Zino, A. Rizzo, “A novel framework for community modeling and characterization in directed temporal networks”, *Applied Network Science*, 4(10), 2019
42. S. Primatesa, G. Guglieri, A. Rizzo, “A risk-aware path planning strategy for UAVs in urban environments”, *Journal of Intelligent and Robotic Systems*, 95, 629-643, 2019
43. A. Franchi, A. Petitti, A. Rizzo, “Distributed Estimation of State and Parameters in Multi-Agent Cooperative Manipulation”, *IEEE Transactions on Control of Network Systems*, vol. 6, n.2, 690-701, 2019
44. L. Zino, A. Rizzo, M. Porfiri, “Modeling memory effects in activity driven networks”, *SIAM Journal on Applied Dynamical Systems*, 17(4), pp. 2830-2854, 2018
45. M. Nadini, K. Sun, E. Ubaldi, M. Starnini, A. Rizzo, N. Perra, “Epidemic spreading in modular time-varying networks”, *Scientific Reports* 8 (2352), 2018
46. L. Zino, A. Rizzo, M. Porfiri, “An analytical framework for the study of epidemic models on activity driven networks”, *Journal of Complex Networks*, *Journal of Complex Networks*, vol. 5, n. 6, pp. 924–952, 2017
47. P. Phamduy, M. A. Vazquez, C. Kim, V. Mwaffo, A. Rizzo, M. Porfiri, “Design and characterization of a miniature free-swimming robotic fish for animal-robot research”, *International Journal of Intelligent Robotics and Applications*, vol. 1, n. 2, pp. 209-223, 2017
48. L. Zino, A. Rizzo, M. Porfiri, “Continuous-time discrete-distribution theory for activity-driven networks”, *Physical Review Letters* 117, 228302, 2016
49. S. Giannini, A. Petitti, D. Di Paola, A. Rizzo, “Asynchronous max-consensus protocol with time delays: convergence results and applications”, accepted for publication to *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 63, n. 2, pp. 256-264, February 2016

50. A. Rizzo, B. Pedalino, M. Porfiri, "A network model for ebola spreading", *Journal of Theoretical Biology*, Volume 394, 7 April 2016, pp. 212–222, 2016
51. A. Rizzo, M. Porfiri, "Innovation diffusion on time-varying activity-driven networks", *European Physical Journal B*, vol. 89, n. 1, pp.1-8, 2016
52. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Spatial pinning control of Vicsek's agents", *Cybernetics and Physics*, vol. 4, n. 3, pp. 61-67, 2015
53. M. Frasca, L. Gallo, A. Rizzo, L. Fortuna, M. Porfiri, "Dimensionality reduction in epidemic spreading models", *Europhysics Letters* 111, 68006, 2015
54. V. Kopman, J. Laut, F. Acquaviva, A. Rizzo, M. Porfiri, "Dynamic modeling of a robotic fish propelled by a compliant tail", *IEEE Journal of Oceanic Engineering*, vol. 40, n. 1, pp. 209-221, 2015
55. D. Di Paola, A. Petitti, A. Rizzo, "Distributed Kalman Filtering in Heterogeneous Sensor Networks", *International Journal of Systems Science*, Vol. 46, No. 14, pp. 2572-2583, 2015
56. A. T. Rashid, M. Frasca, A. A. Ali, A. Rizzo, L. Fortuna, "Multi-robot localization and orientation estimation using robotic cluster matching algorithm", *Robotics and Autonomous Systems*, Elsevier, Vol. 63, pp. 108-121, 2015
57. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Local and global epidemic outbreaks in populations moving in inhomogeneous environments", *Physical Review E*, 90, 042813, 2014
58. A. Rizzo, M. Frasca, M. Porfiri, "Effect of individual behavior on epidemic spreading in activity-driven networks", *Physical Review E*, 90, 042801, 2014
59. L. A. Grieco, A. Rizzo, S. Colucci, S. Sicari, G. Piro, D. Di Paola, G. Boggia, "IoT-aided robotics applications: technological implications, target domains and open issues", *Computer Communications*, Elsevier, Vol. 54, pp. 32-47 2014
60. G. Dellino, P. Lino, C. Meloni, A. Rizzo, C. Bonomo, L. Fortuna, P. Giannone, S. Graziani, "Simulation-optimisation in modelling ionic polymer-metal composites actuators", *Int. J. of Modelling, Identification, and Control*, Inderscience. Vol. 17, No. 1, pp. 8-18, 2012.
61. A. Rizzo, "Editorial: From Complex Systems to Complex Systems Technology and Return: A Tale of an Endless Loop", *IEEE Systems Journal*, Vol. 6 No. 3, 2012.
62. M. Frasca, A. Buscarino, A. Rizzo, L. Fortuna, "Spatial Pinning Control", *Physical Review Letters*, 108, 204102, 2012.

63. R. S. Varga, A. Rizzo, "An Application Of Nonnegative Matrices To The Synchronization Of Chaotic Oscillators", *Linear Algebra and its Applications*, Vol. 436, No. 2, pp. 265-275, 2012.
64. G. Dellino, P. Lino, C. Meloni and A. Rizzo, "Kriging Meta-model Management in the Design Optimization of a CNG injection system", *Mathematics and Computers in Simulation*, Elsevier, vol. 79, No. 8, pp. 2345-2360, 2009.
65. M. Frasca, A. Buscarino, A. Rizzo, L. Fortuna, S. Boccaletti, "Synchronization of Moving Chaotic Agents", *Physical Review Letters*, 100, 044102, 2008.
66. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Effects of Long-Range Connections in Distributed Control of Collective Motion", *International Journal of Bifurcation and Chaos*, Vol. 17, No. 7, pp. 2411-2417, 2007.
67. P. Lino, B. Maione, A. Rizzo, "Nonlinear Modelling and Control of a Common Rail Injection System for Diesel Engines", *Applied Mathematical Modelling*, Vol. 31, No. 9, pp. 1770-1784, 2007.
68. M. Frasca, A. Buscarino, A. Rizzo, L. Fortuna, S. Boccaletti, "Dynamical Network Model of Infective Mobile Agents", *Physical Review E* 74, 036110, 2006.
69. P. Andriani, F. Conti, L. Fortuna, M. Frasca, G. Passiante, A. Rizzo, "Innovation Systems by Nonlinear Networks", *Nonlinear Dynamics* Vol.44, pp. 263–268, 2006.
70. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Dynamical Network Interactions in Distributed Control of Robots", *Chaos*, Vol. 16, No.1, 015116, 2006.
71. L. Bertalot, B. Esposito, Y. Kaschuck, D. Marocco, M. Riva, A. Rizzo, D. Skopintsev, "Fast digitizing techniques applied to scintillation detectors", *Nuclear Physics B - Proceedings Supplements*, Vol. 150, pp. 78-81, 2006.
72. A. Vicari, G. Currenti; C. Del Negro; L. Fortuna; A. Herault; R. Napoli; A. Rizzo, "Simulations of lava flows at Mt Etna using paradigms of parallel computing", *Nonlinear Phenomena in Complex Systems*, Vol. 8, No. 1, pp. 84-88, 2005.
73. C. Bonomo, L. Fortuna, P. Giannone, S. Graziani, A. Rizzo, "Investigation on Non Linear Phenomena in IPMC Materials", *Nonlinear Phenomena in Complex Systems*, Vol. 8, No. 2, pp. 206-209, 2005.
74. B. Maione, P. Lino, A. Rizzo, "Neural Network Nonlinear Modeling of a Common Rail Injection System for a CNG Engine", *WSEAS Transactions on Systems*, Vol. 3, No. 5, pp. 2282-2287, 2004.
75. B. Esposito, Y. Kaschuck, A. Rizzo, L. Bertalot, A. Pensa, "Digital Pulse Shape Discrimination in Organic Scintillators for

- Fusion Applications”, *Nuclear Instrumentation and Measurement, Part A*, Vol. 518, No. 1-2, pp. 626-628, 2004.
76. P. Arena, S. Castorina, M. Frasca, A. Rizzo, “An Integrated Chua’s Cell for the Implementation of a Chua’s Array”, *International Journal of Bifurcation and Chaos*, Vol. 14, No. 1, pp. 93-105, 2004.
77. P. Arena, P. Di Giamberardino, L. Fortuna, F. La Gala, S. Monaco, G. Muscato, A. Rizzo, R. Ronchini, “Toward a Mobile Autonomous Robotic System for Mars Exploration”, *Planetary and Space Science*, Vol. 52, pp. 23-30, 2004.
78. L. Fortuna, A. Rizzo, M. Sinatra, M.G. Xibilia, “Soft Analyzers for a Sulfur Recovery Unit”, *Control Engineering Practice, Special Issue – Award Winning Applications IFAC 2002 World Congress*, Vol. 11, No. 12, pp.1491-1500, 2003.
79. L. Fortuna, M. Frasca, A. Rizzo, “Chaotic Pulse Position Modulation to Improve the Efficiency of Sonar Sensors”, *IEEE Trans. on Instrumentation and Measurements*, Vol. 52, No. 6, pp.1809-1814, 2003.
80. L. Fortuna, A. Rizzo, M.G. Xibilia, “Modeling Complex Dynamics via Extended PWL-Based CNNs”, *International Journal on Bifurcation and Chaos*, Vol. 13, No. 11, pp. 3273-3286, 2003.
81. A. Bonasera, M. Bucolo, L. Fortuna, M. Frasca, A. Rizzo, “A New Characterization of Chaotic Dynamics: the d_∞ parameter”, *Nonlinear Phenomena in Complex Systems*, Vol.6, No.3, pp. 779-786, 2003.
82. R. Caponetto, L. Fortuna, A. Rizzo, “Nonlinear Modeling of Fuel Cell Systems for Vehicles”, *Nonlinear Phenomena in Complex Systems*, Vol.6, No.3, pp. 746-751, 2003.
83. L. Fortuna, M. Frasca, A. Rizzo, “Experimental Pulse Synchronisation of Two Chaotic Circuits”, *Chaos, Solitons and Fractals*, Vol. 17, No. 2-3, pp. 355-361, 2003.
84. G. Buceti, C. Centioli, F. Iannone. M. Panella, A. Rizzo, V. Vitale, “A rating system for post pulse data validation”, *Fusion engineering and desing*, vol. 66-68, pp. 887-891, 2003.
85. M. Bucolo, R. Caponetto, L. Fortuna, M. Frasca, A. Rizzo, “Does Chaos Work Better than Noise?”, *CAS Magazine*, Vol. 2, No. 3, 2002.
86. M. Bucolo, L. Fortuna, M. Nelke, A. Rizzo, T. Sciacca, “Prediction Models for the Corrosion Phenomena in Pulp & Paper Plant”, *Control Engineering Practice*, Vol.10, pp. 227-237, 2002.
87. A. Rizzo, M.G. Xibilia, “An Innovative Intelligent System for Sensor Validation in Tokamak Machines”, *IEEE Trans. on Control Systems Technology*, Vol. 10, No. 3, pp.421-431, 2002.
88. G. Buceti, L. Fortuna, A. Rizzo, M.G. Xibilia, “Automatic Validation of the 5-Channel DCN Interferometer in ENEA-FTU

based on Soft Computing Techniques”, *Fusion Engineering and Design*, Vol. 60, No. 3, pp.381-387, 2002.

89. P. Arena, R. Caponetto, L. Fortuna, A. Rizzo, “Noise-Supported Wavefronts in Cellular Neural Networks Based Circuits”, *IEEE Transactions on Circuits and Systems, Part 1*, Vol. 48, No. 3, pp. 360-363, 2001.

90. L. Cantelli, L. Fortuna, M. Frasca, A. Rizzo, “Frequency Switched Chua’s Circuit: Experimental Dynamics Characterisation”, *International Journal on Bifurcation and Chaos*, Vol. 11, No. 1, pp. 231-239, 2001.

91. P. Arena, R. Caponetto, L. Fortuna, M. La Rosa, A. Rizzo, “Self-Organization in Non-Recurrent Complex Systems”, *International Journal on Bifurcation and Chaos*, Vol. 10, No. 5, pp.1115-1125, 2000.

92. P. Arena, R. Caponetto, L. Fortuna, A. Rizzo, “Nonorganised Deterministic Dissymetries Induce Regularity in Spatio-Temporal Dynamics”, *International Journal on Bifurcation and Chaos*, Vol. 10, No. 1, pp. 73-85, 2000.

BOOK CHAPTERS

1. A. Rizzo, M. Porfiri, “Toward a realistic model of epidemic spreading with activity driven networks”. In N. Masuda and P. Holme: “Temporal Network Epidemiology”, Springer Series in Theoretical Biology, Springer Series in Theoretical Biology, pp. 317-342, ISBN 978-981-10-5286-6, October 2017.

2. A. Rizzo, “Soft Sensors and Artificial Intelligence with Applications to Nuclear Fusion Experiments”. In L. Fortuna, A. Fradkov, M. Frasca, *From Physics to Control through an Emerging View*, World Scientific Publishing, Singapore, ISBN 978-981-4313-14-8, June 2010.

3. A. Buscarino, L. Fortuna, M. Frasca and A. Rizzo, “From Animal Collectives and Complex Networks to Decentralized Motion Control Strategies”. In S. Boccaletti, V. Latora and Y. Moreno, *Handbook on Biological Networks*, World Scientific Lecture Notes in Complex Systems, World Scientific, ISBN 978-981-283-879-7, December 2009.

4. A. Buscarino, L. Fortuna, M. Frasca and A. Rizzo, “Synchronization in Networks of Mobile Agents”. In A. Chiuso, L. Fortuna, M. Frasca, A. Rizzo, L. Schenato, S. Zampieri, *Modelling, Estimation and Control of Networked Complex Systems*. Springer UCS Series. ISBN 978-3-642-03198-4, doi 10.1007/978-3-642-03199-1. 2009. pp. 3-25

5. G. Dellino, P. Lino, C. Meloni and A. Rizzo, “Enhanced Evolutionary Algorithms for MDO: a Control Engineering Perspective”. In C. Grosan, A. Abraham and H. Ishibuchi, *Hybrid Evolutionary*

Algorithms, Springer SCI series, vol. 75, August 2007, pp. 41-80. ISBN: 978-3-540-73296-9.

6. G. d'Aloja, P. Lino, B. Maione, A. Rizzo, "Modeling of Motor Neuronal Structures via Transcranial Magnetic Stimulation", in J. Filipe et al., *Informatics in Control, Automation and Robotics II*, Springer, ISBN-13 978-1-4020-5625-3, pp. 191-197, 2007.

7. G. Dellino, P. Lino, C. Meloni and A. Rizzo, "Kriging Meta-models in Design Optimization: an Automotive Engineering Application", In F. Pistella and R. M. Spitaleri, *IAC Report n. 93 (9/2006)*, Rome, Italy, September 2006, pp.41-42.

8. M. Bucolo, M.C. Cutuli, L. Fortuna, A. Rizzo, "Spatial Diversity in Reaction-Diffusion Fuzzy Cellular Networks", in *Lectures on Soft Computing*, Selected Lectures of the School on Soft-Computing at Salerno University, Springer-Verlag, Studies on Fuzziness and Soft-Computing Series, Jul 2001, ISBN 3-7908-1396-6.

PATENTS

1. L. Occhipinti, L. Fortuna, A. Rizzo, M. Frasca, (2002) A programmable chaos generator and process for use thereof, Patent No. 01830015.2

2. L. Fortuna, A. Rizzo, M. Frasca, M. Branciforte, M. Bartolone, (2002) A system for detecting distances using chaotic signals, Patent No. 01830801.5-1248

MEDIA COVERAGE AND OUTREACH

1. August 2022 - Our Amazon Research Award featured in a one-page-long interview with PI Rizzo in the National Newspaper "Il Messaggero"

2. July 2021 - Our research "How Adherence to Public Health Measures Shapes Epidemic Spreading" has been featured on the SIAM News website

3. April 2021 - Our work on the effect of use of mask and social distancing during the COVID-19 pandemic has been covered by the National Press and TV (La Repubblica, Corriere della Sera, La Stampa, TV La7 "di Martedì", TV TG3 Piemonte Region)

4. March 2021 - The US and International press cover our research on modeling of COVID-19 transmission in Italy (Huffington Post Spain, Preferente (Spain), Futurity, NBC New York, NYU Tandon News)

5. February 2021 - Our work on COVID-19 modeling in Italy covered by the National Press and TV (Il Fatto Quotidiano, La Repubblica, Corriere della Sera, TG3 Leonardo)

6. January 2021 - Our agent-based model results on vaccination from COVID-19 covered by The New York Post , Politecnico di Torino News, NYU news, Advanced Science News and many other websites (Fast Company, healthcarefinance, insurance-journal...)
7. November 2020 - Dr. Rizzo invited as a panelist to an outreach event (talk show) about the scientific method and the dystopic present of COVID-19 during the European Night of Researchers (online)
8. June 2020 - Our research on COVID-19, in collaboration with the New York University Tandon School of Engineering, is featured on the Instagram feed of the Politecnico di Torino with an online interview
9. June 2020 - Our work on risk-aware navigation of drones, funded by Amazon, covered by Repubblica "Amazon sceglie Torino e il politecnico per sperimentare i suoi droni a guida autonoma" (National press, primary daily newspaper)
10. February 2020 - Our work on leader-follower dynamics on temporal networks featured in the "Scope Monthly" magazine of the New York University Tandon School of Engineering
11. December 2018 to February 2019 - Our research on time-varying networks to realistically model epidemic spreading featured on the SIAM research nuggets, NSF News from the Field, Metro US New York, Infection Control Today
12. March 13, 2017, La Stampa Torino, "Politecnico, una sfida da 300mila Euro: Assegnati all'ateneo i quattrini per sei progetti, dai droni alle piattaforme web" (in Italian)
13. December 6, 2016, La Stampa Torino, "Fronteggiare le epidemie si può, è matematico: "Si diffondono con i meccanismi dei Social" (in Italian)
14. December 6, 2016, Repubblica Torino, "Epidemie, nuovo modello del Politecnico di Torino: "Si propagano come i 'trend topic' su Twitter" (in Italian)
15. November 30, 2016, R&D Magazine, "New Model to Predict Disease Outbreak"
16. Winter 2015, NYU Research Digest, "Researchers Develop New Model to Study Epidemics"
17. November 6, 2014, Eurekalert, "Researchers develop new model to study epidemics"
18. November 6, 2014, ScienceDaily, "Researchers develop new model to study epidemics"
19. October 3, 2014, Physics - Spotlighting Exceptional Research (American Physical Society), "Effect of individual behavior on epidemic spreading in activity-driven networks"

1. M. Rinaldi, S. Primatesta, G. Guglieri, A. Rizzo, "Auction-based Task Allocation for Safe and Energy Efficient UAS Parcel Transportation", *Transportation Research Procedia*, 65, 60-69, 2022 (11th International Conference on Air Transport INAIR 2022)
2. S. Martini, S. Sönmez, A. Rizzo, M. Stefanovic, M.J. Rutherford, K.P. Valavanis, "Euler-Lagrange Modeling and Control of Quadrotor UAV with Aerodynamic Compensation", proceedings of the 2022 International Conference on Unmanned Aircraft Systems (ICUAS 2022), Dubrovnik, Croatia, 2022
3. O. Kedilioglu, T. M. Bocco, M. Landesberger, A. Rizzo, J. Franke, "AsUcoE: Enhanced ArUco Marker", Proceedings of the 21st International Conference on Control, Automation and Systems (ICCAS), Jeju, Republic of Korea, 2021
4. A. Centurelli, A. Rizzo, S. Tolu, E. Falotico, "Open-Loop Model-Free Dynamic Control of a Soft Manipulator for Tracking Tasks", Proceedings of the 20th International Conference on Advanced Robotics (ICAR), Ljubljana, Slovenia, 2021
5. G. Allasia, A. Rizzo, K. Valavanis, "Quadrotor UAV 3D Path Planning with Optical-Flow-based Obstacle Avoidance", proceedings of the 2021 International Conference on Unmanned Aircraft Systems (ICUAS 2021), Athens, Greece, June 15-18, 2021
6. G. Aiello, K. Valavanis, A. Rizzo, "3D Real-Time Energy Efficient Path Planning for a Fleet of Fixed-Wing UAVs", proceedings of the 2021 International Conference on Unmanned Aircraft Systems (ICUAS 2021), Athens, Greece, June 15-18, 2021
7. S. Primatesta, A. Pagliano, G. Guglieri, A. Rizzo, "Model Predictive Sample-based Motion Planning for Unmanned Aircraft Systems", proceedings of the 2021 International Conference on Unmanned Aircraft Systems (ICUAS 2021), Athens, Greece, June 15-18, 2021
8. E. Turco, V. Bo, M. Pozzi, A. Rizzo, D. Prattichizzo, "Grasp planning with a soft reconfigurable gripper exploiting embedded and environmental constraints", proceedings of the 4th IEEE International Conference on Soft Robotics (RoboSoft), Yale University, New Haven CT, Usa, April 12-16, 2021
9. S. Primatesta, M. Scanavino, G. Guglieri, A. Rizzo, "A Risk-based Path Planning Strategy to Compute Optimum Risk Path for Unmanned Aircraft Systems over Populated Areas", 2020 International Conference on Unmanned Aircraft Systems, ICUAS 2020, Athens, Greece, and online, June 9-12, 2020
10. W. Gu, D. Hu, L. Cheng, Y. Cao, A. Rizzo, K. Valavanis, "Autonomous wind turbine inspection using a quadrotor", 2020 In-

ternational Conference on Unmanned Aircraft Systems, ICUAS 2020, Athens, Greece, and online, June 9-12, 2020

11. S. Primatesta, M. Scanavino, A. Lorenzini, F. Polia, E. Stabile, G. Guglieri, A. Rizzo, "A Cloud-based Vehicle Collision Avoidance Strategy for Unmanned Aircraft System Traffic Management (UTM) in Urban Areas", Proceedings of the 2020 IEEE International Workshop on Metrology for Aerospace, Virtual Conference, June 22-24, 2020

12. L. Zino, A. Rizzo, M. Porfiri, "On consensus and collective behavior over heterogeneous temporal networks", Proceedings of the 21th World Congress of the International Federation of Automatic Control, IFAC 2020, Berlin, Germany, July 12-17, 2020

13. C. Possieri, A. Rizzo, "A Mathematical Framework for Modeling Propagation of Infectious Diseases with Mobile Individuals", Proceedings of the 58th Conference on Decision and Control, CDC 2019, Nice, France, December 11-13, 2019

14. C. N. Perez-Montenegro, L. Colangelo, J. M. Pardo Alvarez, A. Rizzo, C. Novara, "Asynchronous Multi-Rate Sampled-Data Control: An Embedded Model Control Perspective", Proceedings of the 58th Conference on Decision and Control, CDC 2019, Nice, France, December 11-13, 2019

15. S. Primatesta, N. Bloise, R. Antonini, G. P. Fici, M. Gasparone, G. Guglieri, A. Rizzo, "A Cloud-based Framework for Intelligent Navigation and Coordination for UASs in Urban Areas", Proceedings of the 2019 International Conference on Unmanned Aircraft Systems, ICUAS '19, Atlanta GA, USA, June 11-14, 2019

16. W. Gu, K. Valavanis, M. Rutherford, A. Rizzo, "A Survey of Artificial Neural Networks with Model-based Control Techniques for Flight Control of Unmanned Aerial Vehicles", Proceedings of the 2019 International Conference on Unmanned Aircraft Systems, ICUAS '19, Atlanta GA, USA, June 11-14, 2019

17. N. Bloise, S. Primatesta, R. Antonini, G. P. Fici, M. Gasparone, G. Guglieri, A. Rizzo, "Analysis of Unmanned Aircraft System technologies to enable safe operations in urban areas", Proceedings of the 2019 International Conference on Unmanned Aircraft Systems, ICUAS '19, Atlanta GA, USA, June 11-14, 2019

18. A. Petitti, A. Milella, A. Rizzo, "A Distributed Strategy to Detect When to Stop the Continuous-Time Average Consensus Protocol", Proceedings of the 2019 European Control Conference, ECC19, Napoli, Italy, June 25-28, 2019

19. L. Zino, A. Rizzo, M. Porfiri, "Effect of Self-Excitement and Behavioral Factors on Epidemics on Activity Driven Networks",

Proceedings of the 2019 European Control Conference, ECC19, Napoli, Italy, June 25-28, 2019

20. W. Gu, C. Perez-Montenegro, E. Capello, A. Rizzo, "An Integrated Control Architecture for a Cloud-Based Unmanned Aerial Vehicle System with Lossy Network", Proceedings of the 2019 European Control Conference, ECC19, Napoli, Italy, June 25-28, 2019

21. G.C. Calafiore, C. Bongiorno, A. Rizzo, "A Control-Oriented Model for Mobility on Demand Systems", Proceedings of the 57th IEEE Conference on Decision and Control, CDC 2018, Miami Beach FL, USA, December 17-19, 2018

22. C. Bongiorno, L. Zino, A. Rizzo, "On unveiling the community structure of temporal networks", Proceedings of the 57th IEEE Conference on Decision and Control, CDC 2018, Miami Beach FL, USA, December 17-19, 2018

23. S. Primatesta, A. Guglieri, A. Rizzo, "A risk-aware path planning method for unmanned aerial vehicles", Proceedings of 2018 International Conference on Unmanned Aircraft Systems, ICUAS'18, Dallas, TX, USA, June 12-15, 2018

24. C. Bongiorno, A. Rizzo, M. Porfiri, "An information-theoretic approach to study activity driven networks", Proceedings of the 2018 IEEE International Symposium on Circuits and Systems, ISCAS 2018, Florence, Italy, May 27-30, 2018

25. G.C. Calafiore, C. Novara, F. Portigliotti, A. Rizzo, "A flow optimization approach for the rebalancing of mobility on demand systems", Proceedings of the 56th IEEE Conference on Decision and Control, CDC 2017, Melbourne, Australia, December 12-15, 2017

26. S. Primatesta, E. Capello, R. Antonini, M. Gaspardone, G. Guglieri, A. Rizzo, "A Cloud-based Framework for Risk-aware Intelligent Navigation in Urban Environments", Proceedings of the 2017 International Conference on Unmanned Aircraft Systems, ICUAS'17, Miami, FL, USA, June 13-16, 2017

27. G.C. Calafiore, F. Portigliotti, A. Rizzo, "A Network Model for an Urban Bike Sharing System", Proceedings of the 20th World Congress of the International Federation of Automatic Control, IFAC 2017, Toulouse, France, July 9-14, 2017

28. P. Phamduy, M. Vasquez, A. Rizzo, M. Porfiri, "Miniature Underwater Robotic Fish for Animal-Robot Interaction", Proceedings of the ASME 2016 Dynamic Systems and Control Conference, DSCC 2016, Minneapolis MN, USA, October 12-14, 2016

29. A. Petitti, A. Franchi, D. Di Paola, A. Rizzo, "Decentralized Motion Control for Cooperative Manipulation with a Team of Networked Mobile Manipulators", Proceedings of the IEEE In-

- ternational Conference on Robotics and Automation, ICRA 2016, Stockholm, Sweden, May 16-21, 2016
30. A. Petitti, A. Franchi, A. Rizzo, "Decentralized Estimation of Kinematics and Dynamics Properties of an Unknown Load via Multi-Robot Manipulation", Proceedings of the IEEE International Conference on Robotics and Automation, ICRA 2015, Seattle, WA, USA, May 26-30, 2015
31. F. Acquaviva, A. Nuñez Vicencio, D. Di Paola, A. Rizzo, B. De Schutter, "Customer-Oriented Optimal Vehicle Assignment in Mobility-on-Demand Systems", Proceedings of the IEEE Conference on Intelligent Transportation Systems", ICTS 2015, Las Palmas De Gran Canaria, Spain, September 15-18, 2015
32. F. Acquaviva, D. Di Paola, A. Rizzo, "A novel formulation for the distributed solution of load balancing problems in mobility on-demand systems", Proceedings of the 3rd International Conference on Connected Vehicles and Expo, ICCVE 2014, Vienna, Austria, November 3-7, 2014.
33. A. Franchi, A. Petitti, A. Rizzo, "Distributed Estimation of the Inertial Parameters of an Unknown Load via Multi-Robot Manipulation", Proceedings of the 53rd IEEE Annual Conference on Decision and Control, CDC 2014, Los Angeles, CA, USA, December 2014.
34. S. Giannini, A. Petitti, D. Di Paola, A. Rizzo, "Consensus-Based Distributed Target Tracking with Asynchronous Measurements", Proceedings of the 52nd IEEE Annual Conference on Decision and Control, CDC 2013, Firenze, Italy, December 2013.
35. S. Giannini, D. Di Paola, A. Petitti, A. Rizzo, "On the Convergence of the Max-Consensus Protocol with Asynchronous Updates", Proceedings of the 52nd IEEE Annual Conference on Decision and Control, CDC 2013, Firenze, Italy, December 2013.
36. V. Kopman, J. Laut, M. Porfiri, F. Acquaviva, A. Rizzo, "Dynamic Modeling of a Compliant Tail-Propelled Robotic Fish", Proceedings of the 2013 ASME Dynamic Systems and Control Conference, DSCC2013, Palo Alto, CA, USA, October 21-23, 2013.
37. S. Giannini, D. Di Paola, A. Rizzo, "Coverage-Aware Distributed Target Tracking for Mobile Sensor Networks", Proceedings of the 51st IEEE Annual Conference on Decision and Control, CDC 2012, Maui, Hawaii, USA, December 10-13, 2012.
38. D. Di Paola, R. De Asmundis, A. Gasparri, A. Rizzo, "Decentralized Topology Control for Robotic Networks with Limited Field of View Sensors", Proceedings of 2012 American Control Conference, ACC 2012, Montreal, Canada, June 27-29, 2012.

39. A. Petitti, D. Di Paola, A. Rizzo, G. Cicirelli, "Consensus-based Distributed Estimation for Target Tracking in Heterogeneous Sensor Networks", Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference, CDC-ECC 2011, Orlando, Florida, USA, December 12-15, 2011.
40. A. Petitti, D. Di Paola, A. Rizzo, G. Cicirelli, "Distributed Target Tracking for Sensor Networks with Only Local Communication", Proceedings of the 19th Mediterranean Conference on Control and Automation, MED 2011, Corfu, Greece, June 20-23, 2011.
41. A. Rizzo, R. S. Varga, A. Buscarino, L. Fortuna, M. Frasca, "Synchronization and Non-Synchronization Properties in Networks with Constant Degree", Proceedings of the 18th IFAC Triennial World Congress, Milan, Italy, August 28 – September 2, 2011.
42. A. Rizzo, "Soft Sensors and Artificial Intelligence for Nuclear Fusion Experiments", Proceedings of MELECON2010, 15th Mediterranean Electromechanical Conference, Valletta, Malta, April 2010, ISBN 978-1-4244-5794.
43. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Synchronization in a distributed system of moving chaotic agents", Proceedings of the 3rd International Conference "Physics and Control" (PhysCon 2007), Potsdam, Germany, September 2007. Electronic library of the International Physics and Control Society (IPACS), <http://lib.physcon.ru>.
44. G. Dellino, P. Lino, C. Meloni and A. Rizzo, "Performance Evaluation of the Evolution Control in Design Optimization Assisted by Kriging Surrogates", Proceedings of the Industrial Simulation Conference – ISC 2007, Delft, Netherlands, June 11-13 2007, pp. 49-51. ISBN: 978-90-77381-34-2.
45. G. Dellino, P. Lino, C. Meloni and A. Rizzo, "Models for the Design and Optimization of CNG Injection Systems", in Proceedings of the 6th EUROSIM Congress on Modelling and Simulation (EUROSIM), Ljubljana, Slovenia, September 9-13, 2007, ISBN 978-3-901608-32-2, ISSN 3-901608-32-X.
46. C. Bonomo, G. Dellino, L. Fortuna, P. Giannone, S. Graziani, P. Lino, C. Meloni, A. Rizzo, "Optimization Issues in Modeling IPMC Devices", in Proceedings of the 6th EUROSIM Congress on Modelling and Simulation (EUROSIM), Ljubljana, Slovenia, September 9th-13th, 2007, ISBN 978-3-901608-32-2, ISSN 3-901608-32-X.
47. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Distributed control of collective motion of robots through mainly local interactions", Proceedings of the European Conference on Complex

Systems, Oxford, United Kingdom, September 25th – 27th, 2006.

48. G. Dellino, P. Lino, C. Meloni and A. Rizzo, “Multidisciplinary Design Optimization of a Pressure Controller for CNG Injection Systems”, Proceedings of the IEEE CACSD 2006 International Conference on Computer Aided Control Systems Design, Munich, Germany, October 4th-6th 2006, pp. 2689-2694.

49. G. Dellino, P. Lino, C. Meloni and A. Rizzo, “Kriging Meta-models in Design Optimization: an Automotive Engineering Application”, Proceedings of the 6th Meeting on Applied Scientific Computing and Tools – MASCOT 06 Workshop, Rome, Italy, October 5th-7th 2006.

50. M. Bucolo, R. Caponetto, L. Fortuna, M. Frasca, A. Rizzo, “Chaos and Noise-Driven Emergence of Order from Disorder”, Proceedings of the UPoN 2005: Fourth International Conference on Unsolved Problems of Noise and Fluctuations in Physics, Biology, and High Technology, Gallipoli, Italy, June 2005. AIP (American Institute of Physics) Proceedings, vol. 800, ISBN 0-7354-0289-2, Editors L. Reggiani, C. Pannetta, V. Akimov, E. Alfinito, M. Rosini; pp. 231-236.

51. G. d’Aloja, P. Lino, B. Maione, A. Rizzo, “Nonlinear Modeling of Brain Motor Waves via Transcranial Magnetic Stimulation”, Proceedings of the CDC-ECC05, 44th IEEE Conference on Decision and Control and European Control Conference, 2005, Sevilla, Spain, Dec 2005.

52. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, “Local and Long-Range Interactions for Distributed Control of a Group of Robots”, Proceedings of the CDC-ECC05, 44th IEEE Conference on Decision and Control and European Control Conference, 2005, Sevilla, Spain, Dec 2005.

53. B. Maione, P. Lino, A. Rizzo, “A Control-Oriented Model of a Common Rail Injection System for Diesel Engines”, in Proceedings of the IEEE ETFA05, 10th IEEE International Conference on Emerging Technologies and Factory Automation, Catania, Italy, 2005

54. R. Caponetto, L. Fortuna, A. Rizzo, “Neural Network Modelling of Fuel Cell Systems for Vehicles, in Proceedings of IEEE ETFA05, 10th IEEE International Conference on Emerging Technologies and Factory Automation, Catania, Italy, 2005

55. B. Maione, P. Lino, A. Rizzo, “A Model Based Control of Compressed Natural Gas Injection Systems”, in Proceedings of ICINCO05, Second International Conference on Informatics in Control, Automation and Robotics, Barcelona, Spain, 2005

56. G. d’Aloja, P. Lino, B. Maione, A. Rizzo, “Modeling of Motor Neuronal Structures via Transcranial Magnetic Stimulation”, in

Proceedings of ICINCO05, Second International Conference on Informatics in Control, Automation and Robotics, Barcelona, Spain, 2005

57. B. Esposito, L. Fortuna, A. Rizzo, "Neural neutron/gamma discrimination in organic scintillators for fusion applications", Proceedings of the 2004 IEEE International Joint Conference on Neural Networks, Budapest, Hungary, July, 2004, vol. 4, pp. 2931-2936.

58. R. Caponetto, L. Fortuna, M. Frasca, S. Guzzardi, A. Rizzo, "Arrays of Switched Chua's Circuits", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS2004, Vancouver, Canada, 2004.

59. B. Esposito, L. Fortuna, A. Rizzo, "A Neural System for Radiation Discrimination in Nuclear Fusion Applications", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS2004, Vancouver, Canada, 2004.

60. P. Arena, A. Basile, L. Fortuna, G. Mazzitelli, A. Rizzo, M. Zammataro, "CNN-Based Real-Time Video Detection of Plasma Instability in Nuclear Fusion Applications", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS2004, Vancouver, Canada, 2004.

61. G. Giustolisi, A. Rizzo, "CMOS Implementation of an Extended CNN Cell to deal with Complex Dynamics", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS 2003, Bangkok, Thailand, May 2003.

62. G. Iannizzotto, F. La Rosa, A. Rizzo, M.G. Xibilia, : "2D Stillimage segmentation with CNN-Amoeba", Proceedings of the IEEE International Workshop on Computer Architecture for Machine Perception, CAMP2003, May 11-14, New Orleans, LA, 2003.

63. A. Bonasera, M. Bucolo, L. Fortuna, M. Frasca, A. Rizzo, "Experimental evaluation of the d_∞ parameter to characterize chaotic dynamics", Springer-Verlag Series AIP Conference Proceedings, Proceedings of 7th Experimental Chaos Conference, San Diego, California, USA, August 25-29, 2002, Editors: V. In; L. Kocarev; T.L. Carroll; B.J. Gluckman; S. Boccaletti; J. Kurths; Springer-Verlag, Melville, New York, 2003, pp. 355-360, ISBN 0-7354-0145-4.

64. M. Branciforte, F. Doddo, L. Fortuna, A. Rizzo, "A Completely Analog-Based Processor Control for Hexapod Robots", Proceedings of 5th International Conference on Climbing and Walking Robots and the Support Technologies for Mobile Machines (CLAWAR), Paris, September 2002, pp. 71-78.

65. G. Buceti, C. Centioli, F. Iannone, M. Panella, A. Rizzo, V. Vitale, "A Rating System for Post Pulse Data Validation", Pro-

ceedings of the 22nd Symposium on Fusion Technology, SOFT-2002, Helsinki, Finland, September 2002.

66. L. Fortuna, M. Frasca, A. Rizzo, "Self-Organising Behavior of Arrays of Non Identical Josephson Junctions", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS 2002, Vol. 5, pp. 213-216, May 2002, Scottsdale, Arizona, USA.

67. L. Fortuna, A. Rizzo, M. Sinatra, M.G. Xibilia, "Soft Analyzers for a Sulfur Recover Unit", Proceedings of the 15th Triennial IFAC World Congress, Barcelona, Spain, 2002.

68. G. Buceti, L. Fortuna, A. Rizzo, M.G. Xibilia, "An Automatic Validation System for Interferometry Density Measurements in the ENEA-FTU Tokamak Based on Soft-Computing", Proceedings of the 8th International Conference on Accelerator and Large Experimental Physics Control Systems, ICALEPCS01, San Jose, California, 2001, pp. 343-345.

69. P. Arena, M. Branciforte, R. Caponetto, A. Rizzo, G. Peschiera, "An integrated approach for locomotion and visual control of a service hexapod via CNNs", Proceedings of the 2001 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, Como, Italy, Jul 2001. Vol. 2, pp. 980-984.

70. G. Buceti, A. Gallo, A. Rizzo, M.G. Xibilia, "A Fuzzy Sensor Validation System for Plasma Density Measures in Tokamak Machines Based on Neural Models", Proceedings of the Fourth International ICSC Symposium on Soft Computing and Intelligent Systems for Industry, SOCO/ISFI 2001, Paisley, Scotland, U.K., June 26 - 29, 2001.

71. L. Fortuna, M. Frasca, A. Rizzo, "Generating Solitons in Lattices of Nonlinear Circuits", Proceedings of the International Symposium on Circuits and Systems, ISCAS 2001, May 2001, Sidney, Australia, vol. 2, pp. 680-683.

72. L. Fortuna, M. Frasca, A. Rizzo, "Frequency Hysteresis Phenomena in the Switched Chua's Circuit", Proceedings of the International Symposium on Circuits and Systems, ISCAS 2001, May 2001, Sidney, Australia, vol. 2, pp. 277-280.

73. L. Fortuna, M. Frasca, A. Rizzo, "Chaos Preservation through Continuous Chaotic Pulse Position Modulation", Proceedings of the International Symposium on Circuits and Systems, ISCAS 2001, May 2001, Sidney, Australia, vol. 2, pp. 803-806.

74. M. Bucolo, L. Fortuna, A. Rizzo, "Reaction-Diffusion Fuzzy Cellular Networks", Proceedings of the International Symposium on Computation Intelligence and Learning, COIL2000, Chios, Greece, Jul 2000.

75. A. Bonasera, M. Bucolo, L. Fortuna, A. Rizzo, "The d-inifiite Parameter to Characterise Chaotic Dynamics", Proceedings of the International Joint Conference on Neural Networks, IJCNN 2000, Como, Jul 2000.
76. P. Arena, L. Fortuna, A. Rizzo, M.G. Xibilia, "Extending the CNN Paradigm to Approximate Chaotic Systems with Multivariable Nonlinearities", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS2000, Geneva, Switzerland, Jun 2000.
77. M. Bucolo, L. Fortuna, M. Nelke, A. Rizzo, T. Sciacca, "Corrosion Prediction in Pulp & Paper Industry with Neuro-Fuzzy Technique", Proceedings of the International IFAC Conference on System Identification, SYSID2000, Santa Barbara, CA, Jun 2000.
78. L. Fortuna, A. Gallo, A. Rizzo, MG Xibilia, "An Innovative Intelligent System for Fault Detection in Tokamak Machines", Proceedings of the International Conference on Accelerators and Large Experimental Physics Control Systems, ICALEPCS99, Trieste, Italy, Oct. 99
79. M. Bucolo, L. Fortuna, S. Graziani, A. Rizzo, "Neuro-Fuzzy Identification and Control of a Chain of Oscillators", Proceedings of the International Conference on Electronics, Circuits, and Systems, ICECS99, Pafos, Cyprus, Sep. 1999.
80. P. Arena, M. Bucolo, L. Fortuna, A. Rizzo, "Control of Complex Neuro-Fuzzy Dynamics with Disorder", Proceedings of the European Conference on Circuit Theory and Design, ECCTD99, Stresa, Italy, Sep. 1999, pp. 991-994.
81. P. Arena, L. Fortuna, D. Platania, A. Rizzo, "Spatial Disorder in CNNs Induces Spatio-Temporal Organisation", Proceedings of the European Conference on Circuit Theory and Design, ECCTD99, Stresa, Italy, Sep. 1999, pp. 1011-1014.
82. P. Arena, L. Fortuna, D. Porto, A. Rizzo, "Self-Organisation in Arrays of Nonlinear Systems Induced by Chaotic Perturbation: an Experimental Approach", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS 99, Orlando, FL, vol. 5, pp. 479 – 482, June 1999.
83. L. Fortuna, V. Marchese, A. Rizzo, M.G. Xibilia, "A Neural Networks Based System for Post Pulse Fault Detection and Data Validation in Tokamak Machines", Proceedings of the IEEE International Symposium on Circuits and Systems, ISCAS 99, Orlando, FL, vol. 5, pp. 563 – 566, June 1999.
84. L. Fortuna, M. La Rosa, A. Rizzo, G. Tomarchio, "Controllo Adattativo della Posizione Verticale del Plasma nel JET (Joint European Torus)", Proceedings of the International Conference

BIAS “Automazione 1998”, Milano, pp. 431-439, Nov. 1998 (in Italian).

85. P. Arena, L. Fortuna, G. Muscato, A. Rizzo, “Coping with Vibrational Control”, Proceedings of the International Symposium on Nonlinear Theory and its Applications, NOLTA 98, Le Régent, Crans-Montana, Sep. 98, pp. 89 – 92.

86. E. Marchand, F. Chaumette, A. Rizzo, “Evitement des Butées Articulaires et des Singularités Internes en Asservissement Visuel”, ORASIS 96, 5mes Journées du Pôle Vision du Gdr-Prc Communication Homme-Machine, Clermont-Ferrand, May 1996, pp. 37 – 42 (in French).

87. E. Marchand, F. Chaumette, A. Rizzo, “Using the Task Function Approach to Avoid Joint Limits and Kinematic Singularities in Visual Servoing”, Proceedings of the IEEE International Conference On Intelligent Robots and Systems, IROS96, Osaka, Nov. 1996.

88. E. Marchand, A. Rizzo, F. Chaumette, “Avoiding Robot Joint Limits and Kinematic Singularities in Visual Servoing”, Proceedings of the IEEE International Conference On Pattern Recognition, ICPR96, Wien, Aug. 1996.

INVITED TALKS (SELECTED)

CUSP - Center for Urban Science and Progress - Invited Seminar for the Fall 2022 Research Seminar Series - “Epidemic modeling and forecasting: a journey from the cocktail assumption (shaken, not stirred) to the advent of agent-based computations”, October 21, 2022

Networks 2021 - the Joint NetSci2021 and SunBelt2021 conference - Invited speaker at the satellite symposium “Controlling Complex Networks: When Control Theory Meets Network Science”, with the talk “Consensus over activity driven networks: a starting point to examine model-based control with heterogeneous and time-varying patterns of interactions”, June 23-24, 2021.

SIAM Conference on Applications of Dynamical Systems (DS21), invited speaker at the minisymposium “Data-Driven Approach to Modeling and Analysis of Real-World Dynamical Systems” with the talk “How Adherence to Public Health Measures Shapes Epidemic Spreading: a Temporal Network Model”, May 23-27, 2021

Amazon Research Award Robotics Symposium, invited speaker with the talk “AI-based risk-aware navigation of UAS in urban environments”, online, May 17-21, 2021.

Complex Systems Conference - Flagship conference of the Complex Systems Society - Invited speaker at the satellite “Machine learning Prospective for Complex Networks” with the talk “Telling apart competing processes on networks” and at the satellite “Urban Complex Systems” with the talk “Spatially-resolved modeling and control of COVID-19 spreading,” online conference, December 7-12, 2020.

University of Catania - 2nd International School on Informatics and Dynamics in Complex Networks - Invited lecturer on "Time-varying and activity driven networks: theory and applications," February 14-20, 2020.

Delft University of Technology - Delft Center for Systems and Control - Invited seminar on “Control-Oriented Models for Mobility-On-Demand Systems”, September 13, 2018.

New York University - Abu Dhabi, Symposium in memory of Prof. Ali. H. Nayfeh - Invited speaker on "Activity driven networks for modeling and control of complex systems", January 28-29, 2018.

The J.T. Schwartz School for Scientific Research, Lipari, Italy - Invited speaker at the International Workshop “Complex networks: from socio-economic systems to biology and brain”, September 8-14, 2017.

International School and Conference on Network Science Net-Sci-X 2017, Tel Aviv, Israel - Invited Talk “Dynamical Processes in Time-Varying Networks with Spatial and Temporal Inhomogeneities”, January 15-18, 2017.

Northeastern University, MOBS LAB, Boston, MA - Invited seminar on “Epidemic processes in time-varying networks”, December 10, 2014.

New York University, Courant Institute of Mathematical Sciences, - Invited seminar on "Spatial Pinning Control: collective phenomena in spaces with inhomogeneous features", April 3, 2014.

Polytechnic University of Milan (Italy) - Doctoral school “Analysis of complex networks: structure and dynamics - ACN 2013” of the Italian Society for Chaos and Complexity (SICC) - Invited

talk on "Consensus-based distributed estimation in sensor networks", February 20-22, 2013.

University of Catania (Italy) - 7th International Doctoral School of the Italian Society for Chaos and Complexity (SICC) "Complex Networks in Action" - Invited talk on "Consensus-Based Distributed Target Tracking in Heterogeneous Sensor Networks", September 26-28, 2012.

University of Ontario Institute of Technology - Oshawa, Ontario, Canada. IEEE Distinguished Lecture on "Soft Sensors for Monitoring and Control of Industrial Processes and Nuclear Fusion Experiments", August 30, 2012.

International Conference MELECON2010, the 15th IEEE Mediterranean Electrotechnical Conference, Malta. IEEE Distinguished Lecture on "Soft Sensors and Artificial Intelligence with Applications to Nuclear Fusion Experiments", April 26-28, 2010.

European Commission, DG Information Society and Media, Third Monitoring and Control Concertation Week, Concertation Meeting on Control of Large-Scale Systems, Bruxelles. Keynote Presentation in "Complex Systems: from Science to Technology", October 2009.

International Conference PHYSCON09, 4th International Scientific Conference on Physics and Control, Catania (Italy). IEEE Distinguished Lecture on "Soft Sensors and Artificial Intelligence with Applications to Nuclear Fusion Experiments", September 2004.

International Conference "Foundation and Advances in Nonlinear Science", Minsk (Belarus). Plenary session on "Nonlinear Phenomena in IPMC Materials", September 2004.

3rd Technical Committee Meeting of IAEA (International Atomic Energy Agency) on Control, Data acquisition and Remote Participation for Fusion Research, Padova (Italy). Invited talk on "A Post Pulse Rating System for Fusion Experiments", 2001.

ENEA (Italian research institute for energy), Thermonuclear Fusion Division, Frascati (Italy). Invited talks on "Diagnostic Techniques for Tokamak Machines", in several occasions between 1999 and 2001.

NJIT, New Jersey Institute of Technology, Seminar on "Non Linear Circuits and Non Recurrent Complex Systems: New Results", May 1999.

PRESENTATIONS
(ABSTRACTS/POSTERS)

1. L. Zino, M. Ye, A. Rizzo, M. Cao, "Novel game-theoretic modeling of collective decision-making during epidemics", abstract presented at the Networks2021 Conference, a Joint Sunbelt and NetSci Conference, online, July 5-10, 2021
2. F. Parino, L. Zino, M. Porfiri, A. Rizzo, "A metapopulation model to assess the effectiveness of social distancing and travel restrictions on COVID-19 spreading: the Italian case study", abstract presented at the Networks2021 Conference, a Joint Sunbelt and NetSci Conference, online, July 5-10, 2021
3. L. Zino, M. Ye, A. Rizzo, M. Cao, "Modeling Collective Behavioral Response to the COVID-19 Pandemic and Non-Pharmaceutical Interventions", invited abstract presented at the 29th Mediterranean Conference on Control and Automation (MED21), Bari, Italy, June 25-22, 2021
4. B. Behring, A. Rizzo, M. Porfiri, "How Adherence to Public Health Measures Shapes Epidemic Spreading: A Temporal Network Model", invited abstract presented at the 29th Mediterranean Conference on Control and Automation (MED21), Bari, Italy, June 25-22, 2021
5. C. Bongiorno, Y. Zhou, P. Santi, A. Rizzo, C. Ratti, "How biases in urban mental representation affects human navigation", poster presented at NetSci2020, International School and Conference on Network Science, Online, September 20-25, 2020
6. F. Parino, A. Rizzo, B. Barzel, "Identification of mixed dynamics in complex networks", abstract presented at NetSci2020, poster presented at NetSci2020, International School and Conference on Network Science, Online, September 20-25, 2020
7. L. Zino, A. Rizzo, M. Porfiri, "Optimizing self-protective behaviors and confinement in epidemic models on temporal networks", abstract presented at NetSci2020, International School and Conference on Network Science, Online, September 20-25, 2020
8. L. Zino, F. Parino, M. Porfiri, A. Rizzo, "A metapopulation activity-driven network model for COVID-19 in Italy", abstract presented at the workshop "Modeling and control COVID-19 - how dynamical models can help control the epidemic", Online, April 24, 2020
9. L. Zino, F. Parino, M. Porfiri, A. Rizzo, "A metapopulation activity-driven network model for COVID-19 in Italy", abstract presented at the workshop "Modeling and control COVID-19 - how dynamical models can help control the epidemic", Online, April 24, 2020

10. L. Zino, A. Rizzo, M. Porfiri, "On consensus over heterogeneous temporal networks", abstract presented at the 8th International Conference on Complex Networks and their Applications, Lisbona, Portugal, December 10-12, 2019
11. L. Zino, A. Rizzo, M. Porfiri, "How Self-Excitement Dynamics Affects Epidemic Spreading in Time-Varying Networks", abstract accepted at Netsci 2019, International School and Conference on Network Science, Burlington VT, USA, May 27-31, 2019
12. C. Bongiorno, A. Rizzo, M. Porfiri, "Transfer entropy reveals strong ties in temporal social networks", poster presented at NetSci 2018, International School and Conference on Network Science, Paris, France, June 11-15, 2018
13. C. Bongiorno, L. Zino, A. Rizzo, "On Community Detection in Activity-Driven Networks", poster presented at NetSci 2018, International School and Conference on Network Science, Paris, France, June 11-15, 2018
14. A. Rizzo, M. Porfiri, "An activity driven network model for Ebola spreading", poster presented at NetSci-X 2017, International School and Conference on Network Science, Tel Aviv, Israel, January 15-18, 2017
15. L. Zino, A. Rizzo, M. Porfiri, "A continuous-time discrete-distribution theory for activity-driven networks", abstract presented at NetSci-X 2017, International School and Conference on Network Science, Tel Aviv, Israel, January 15-18, 2017
16. L. Zino, A. Rizzo, M. Porfiri, "A continuous-time discrete-distribution theory for activity-driven networks", abstract presented at Complex Networks 2016, The 5th International Workshop on Complex Networks and their Applications, Milan, Italy, November 30 - December 2, 2016
17. A. Rizzo, L. Zino, "Prediction of Spread of Epidemics in Activity-Driven Networks", abstract presented at COMPENG 2016, the 2016 Workshop on Complexity in Engineering, Catania, Italy, July 4-6 2016
18. G. C. Calafiore, M. Ghirard, A. Rizzo, "Robust Dynamic Traffic Assignment under Demand and Capacity Uncertainty", abstract presented at COMPENG 2016, the 2016 Workshop on Complexity in Engineering, Catania, Italy, July 4-6 2016
19. A. Franchi, A. Petitti, A. Rizzo, D. Di Paola, "A Distributed Method for Estimating the Grasping and Inertial Parameters in Cooperative Manipulation", poster presented at the workshop on principles of multi-robot systems, Robotics: Science and Systems (12 Edition), Rome, Italy, July 13-17, 2015
20. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Localized Control of Vicsek's Agents", presented at COMPLENET2014,

5th Workshop on Complex Networks, Bologna (Italy), March 12-14 2014

21. A. Buscarino, L. Fortuna, M. Frasca, A. Rizzo, "Motion Control of Vicsek's Agents in an inhomogeneous space", ECCS14, European Conference on Complex Systems, NetCon Satellite Meeting on New Trends in Analysis and Control of Complex Networks, Lucca (Italy), September 24-26 2014

PROFESSIONAL AND
ACADEMIC EXPERIENCE

ASSOCIATE PROFESSOR (WITH TENURE)

Department of Electronics and Telecommunications (from May 12, 2017 - formerly at Department of Control and Computer Engineering)

Politecnico di Torino, Italy

October 30, 2015 to present

Research

- Robotics and automation
- Cooperative robotics
- Complex networks and systems
- Epidemic models
- Modeling and control of mobility systems
- Modeling and control of social systems
- Data-driven modeling and control
- Founder and member of the Interdepartmental Research Center for Service Robotics of the Politecnico di Torino *PIC4Ser*

Teaching

Core Faculty of the MSc in Mechatronic Engineering

- Spring 2018 to 2023: Robotics (Graduate)
- Spring 2017 to 2023: Automation and planning of production systems (Graduate)
- Spring 2017: Integrated production management (Graduate)
- Spring 2016: Automatic Control (Undergraduate)
- Spring 2016: Convex Optimization (Graduate)

Advising

Postdoctoral researchers:

Past

- Stefano Primatesta, on risk-aware path planning for mobile robots and socially-aware navigation
- Carlos Norberto Perez-Montenegro, on risk-aware drone navigation in urban environments
- Christian Bongiorno, on modeling and control of sustainable mobility systems and complex systems and networks, now a postdoctoral researcher in quantitative finance and econophysics at Ecole Centrale de Paris
- Leonardo Massai, on the development of a smart decision module in airborne platform solution for integrate surveillance systems

Ph.D. students:

Current

- Lorenzo Calogero, on data-driven modeling and control of hybrid vehicles, PhD fellowship funded by Punch Softronix, expected graduation in 2026
- Yuan Cao, on physics-informed reinforcement learning for autonomous robots, expected graduation in 2026
- Jinze Wu, on distributed algorithms for sensor networks, joint PhD with SusTech Shenzhen, China, expected graduation in 2026
- Zhipeng Ding, on modeling and control of redundant manipulators for welding applications, PhD fellowship funded by Efort Europe, expected graduation in 2025
- Weibin Gu, on AI-enhanced control of unmanned aerial vehicles, expected graduation in 2024
- Giada Galati, on socially-aware planning and navigation of autonomous robots, expected graduation in 2024
- Francesco Parino, on analysis and control of temporal networks with applications to epidemics, expected graduation in 2023

Past

- Francesco Vincenzo Surano, on data-driven epidemic modeling in complex time-varying networks, graduated in 2023 with the thesis “Unveiling human interactions : approaches and techniques toward the discovery and representation of interactions in networks”

- Osman Osman Abdalla Sidahmed, on cooperative control of UAVs for service robotics applications, graduated in 2022 with the thesis “Autonomous Navigation for Unmanned Aerial Systems - Visual Perception and Motion Planning”
- Matthieu Nadini, on epidemic processes on temporal networks (co-mentored with Prof. Maurizio Porfiri at New York University), graduated in June 2020 with the thesis “Analysis and Inference in Temporal Networks with Application to Epidemic Spreading”
- Stefano Primatesta, on risk-aware drone navigation in urban environments, graduated in July 2019 with the thesis “Autonomous Navigation for Mobile Robots in Crowded Environments - Challenges with ground and aerial robots”

MSc Students:

- Advising about 15 MSc students per academic year in the preparation of their *laurea* (MSc) final thesis. As of February, 2023, graduated 117 MSc students, plus 22 ongoing.

Service

- Chair of the 2022-2023 committee for the exam for professional qualifications of Engineers
- Component of the National Panel for the evaluation of the scientific production (ANVUR Exercise)
- Member of the Departmental workgroup on the development of strategic plans
- Member of the Departmental workgroup on publications
- Member of the University “green team” for the development of sustainable policies on campus
- Member of the Doctoral School Committee of the PhD program in Electronics and Telecommunications Engineering

VISITING PROFESSOR

Department of Mechanical and Aerospace Engineering
 NYU Polytechnic School of Engineering, Brooklyn, NY
 September 1, 2013 to January 2016

From January 15, 2016, affiliated to the Office of Innovation

Research

- Modeling and control of networked and complex systems
- Modeling and control of epidemic spreading on temporal networks
- Modeling and control of a robotic fish propelled by a compliant fin

Teaching

- Fall 2015: Simulation Tools and Software for Mechatronics and Robotics (Graduate)
- Fall 2015: Linear Control Theory and Design I (Graduate)
- Fall 2015: Automatic Control (Undergraduate)
- Spring 2015: Nonlinear Systems and Control (Graduate) Student overall value added to their education: 5.0/5.0
- Spring 2015: Automatic Control (Undergraduate) Student overall value added to their education: 4.9/5.0
- Fall 2014: Linear Control Theory and Design I (Graduate) Student overall value added to their education: 4.9/5.0
- Fall 2014: Measurement Systems (Undergraduate) Student overall value added to their education: 4.5/5.0
- Spring 2014: Nonlinear Systems and Control (Graduate) Student overall value added to their education: 5.0/5.0
- Spring 2014: Digital Control Systems (Graduate) Student overall value added to their education: 4.8/5.0
- Fall 2013: Linear Control Theory and Design I (Graduate) Student overall value added to their education: 4.4/5.0

Advising

- co-mentored, with Maurizio Porfiri, two Italian MS Students: Nicola Longo and Laura Gallo

Service

- Member of the workgroup for the design of the new Master's program in robotics and mechatronics. I contributed to the design of the Master's program and personally designed two courses.

VISITING ASSISTANT PROFESSOR

Department of Mechanical and Aerospace Engineering
Polytechnic Institute of New York University, Brooklyn, NY
Summer terms 2012 and 2013

Research

- Modeling and control of a robotic fish propelled by a compliant fin

Teaching

- Automatic Control (Undergraduate)
- Measurement Systems (Undergraduate)

Advising

- co-mentored, with Maurizio Porfiri, the Ph.D. candidates Jeffrey Laut, Vladislav Kopman, and the Italian MS Student Francesco Acquaviva

RESEARCHER (WITH TENURE)

Politecnico di Bari (Polytechnic Institute of Bari, Italy)
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering)
July 2002 - September 2015 (tenured since 2005)

Research

- Modeling, identification and control in industrial applications (automotive, smart materials)
- Soft sensors and inferential models for industrial processes
- Complex networks and systems
- Distributed estimation
- Coordination, agreement, and collective motion
- Smart systems and materials
- Nonlinear and chaotic dynamics, circuits and systems

Teaching

- Linear signals and systems (Undergraduate)
- Systems Theory (Undergraduate)
- Digital Control Systems (Undergraduate)
- Robot Control (Graduate)
- Automatic Control (Continuing education for professionals, FIAT Research Center)
- Computer Architecture (High School complementary education program)
- Foundations of Computer Architectures and Algorithm (Conservatory of Music, Bari, Italy, Master Degree in Computational Analysis of Music Production)

Advising

- Advised two Ph.D. Students. Both of them have been awarded with supplementary funding by the *Scuola Interpolitecnica di Dottorato* (Inter-polytechnic Ph.D. School) to develop a high qualification Ph.D. program:
 - Antonio Petitti, on distributed estimation and control of networked systems (graduated in 2015)
 - Francesco Acquaviva, on scheduling and control algorithms for sustainable mobility on demand (graduated in 2016)

- Advised, during their *laurea* thesis, more than 15 undergraduate and graduate students per year, more than 200 during my tenure

Service

- Member of the Doctoral School Committee of the PhD program in Information Engineering, 2006-2012
- Member of the Doctoral School Committee of the PhD program in Electric and Information Engineering, 2012-2015

RESEARCH CONSULTANT

ST Microelectronics - Catania (Italy) Site
Soft Computing and Applications Group
November 1999 - October 2001

Industrial Research

- Nonlinear and chaotic dynamics with applications to the control of bio-inspired locomotion
- Chaotic dynamics for the improvement of the performance of ultrasonic sensors in mobile robotics application

International Patents

- L. Occhipinti, L. Fortuna, A. Rizzo, M. Frasca, (2002) A programmable chaos generator and process for use thereof, Patent No. 01830015.2
- L. Fortuna, A. Rizzo, M. Frasca, M. Branciforte, M. Bartolone, (2002) A system for detecting distances using chaotic signals, Patent No. 01830801.5-1248

INDUSTRY PROFESSOR

University of Messina (Italy)
Faculty of Engineering - *Laurea* in Electronic Engineering
November 1999 - June 2002

Teaching

- Industrial Robotics

Advising

- Advised about 5 students per year for the preparation of the *laurea* thesis

EURATOM RESEARCH FELLOW

JET Joint Undertaking - Joint European Torus - Culham (UK)
Magnet and Power Supplies Division
March - December 1998

Research

- Design and implementation of sensor validation and fault detection strategies for the mechanical stress sensor system of the tokamak machine

ENEA RESEARCH FELLOW

ENEA - Thermonuclear Fusion Division - Frascati Tokamak Upgrade (FTU)
Frascati, Italy
1999-2002

Research

- Design and implementation of sensor validation and fault detection strategies on the interferometry system for plasma density measurements
- Design and implementation of sensor validation strategies on the power supply systems
- Design and implementation of an automatic rating system for the assessment of nuclear fusion experiments
- Design and implementation of a tool for the automatic discrimination between neutrons and gamma particles, based on scintillography measurements

TEACHING ASSISTANT (1996-2000)

RESEARCH FELLOW AND TEACHING ASSISTANT (2000-2002)

Department of Electric, Electronic and Systems Engineering
Faculty of Engineering - University of Catania (Italy)

Research

- Nonlinear dynamics and chaotic circuits and systems
- Soft sensors for monitoring and control of industrial processes
- Dynamic modeling and identification in industrial applications, with a particular focus on data-driven approaches

Advising

- Advised more than 15 students per year during the preparation of their final *laurea* thesis

Teaching assistant

- delivered lectures on Systems Theory and Automatic Control for about three hours per week
- prepared lectures and teaching material for the classes
- maintained weekly office hours for one-on-one and small group interaction with students

- prepared and administered written exams, and collaborated in oral examination sessions

RESEARCH STUDENT

IRISA-INRIA (Institute de Recherche en Informatique et Systèmes Aléatoires)
 TEMIS Research Group
 Rennes, France
 December - July 1995

Research on robot singularity and joint limit avoidance in visual servoing problems

- Theoretical study and formulation
- Implementation on a cartesian robot equipped with an eye-in-hand camera
- Publication and dissemination of the results

AFFILIATIONS

IEEE (1996 Student Member, 2000 Member, 2008 Senior Member)

IEEE Control Systems Society, Italy Chapter Vice Chair, 2013-present

IEEE Nuclear and Plasma Science Society, Italy Chapter Chair, 2001-2015

IMACS (International Associations for Mathematics and Computers In Simulation), Honor Member, 2010

IPACS, International Physics and Control Society, Member, 2009-present

Italian Engineer Register, Member, 1996-2020

Professional Engineer Qualification - 1996

SICC - Italian Society for Chaos and Complexity, Member, 2013, Executive Committee Member, term 2018-2021

CONFERENCE ACTIVITIES

Member of the International Program Committee of the Complex Systems Conference 2022 (CCS 2022)

Member of the International Program Committee of the 1st IFAC Workshop on Control of Complex Systems, *COSY 2022*,

Bologna (Italy), November 24-25, 2022

Member of the International Program Committee of the Conference “Complex Networks and their Applications”, *CNA*, all editions

Satellite meeting organizer for the *NetSci 2020* (International School and Conference on Complex Networks), on *Multiscale analysis of dynamical processes on networks*

Special session organizer for *ECC2019 (European Control Conference) on Analysis and control of complex networks*

General Chair and organizer of the 13th International Workshop of the Italian Society on Chaos and Complexity, on *Complexity and the City*, details here <https://complexcity.polito.it/>

Special session organizer for *ISCAS2018 (IEEE International Symposium on Circuits and Systems, Florence, May 2018) on Modeling and Control of Networked Systems: Perspectives and Methodologies*

General Chair of the International Conference *COMPENG2010, Complexity in Engineering*, organized by the Italy Section of the IEEE in collaboration with AEI (Italian Electrotechnics Association). Proceedings printed by the IEEE Computer Society.

Member of the Scientific Committee of *IEEE COMPENG2012* (Aachen, Germany), and of the Steering Committee of *IEEE COMPENG2014* (Barcelona, Spain) and *COMPENG 2016* (Catania, Italy).

Member of the International Program Committee of the International Conference *ISIC2011, IEEE International Symposium on Intelligent Control* (part of the *IEEE MSC Multiconference on Systems and Control*).

Member of the Scientific Committee of the International Conference *PHYSCON09, 4th International Conference on Physics and Control*. Member of the local organizing committee of the *IFAC DCDS09, Workshop on Dependable Control of Discrete Systems*.

Session Chair in several international Conferences, among which *CDC IEEE International Conference on Decision and Control*, *ECC European Control Conference*, *ISCAS IEEE International Symposium on Circuits and Systems*, *Mediterranean Conference on Control and Automation*.

Special session organizer for *Eurosim 2007 (6th Eurosim Congress on Modeling and Simulation)* on *Multidisciplinary Design Optimization* (with G. Dellino, C. Meloni, P. Lino), for the *SIDRA Italian Congress of the Professors and Researchers in Automation*, in 2009 on *Synchronization and Mobility Models in Networked Systems*, in 2008 on *Modeling, Estimation and Control of Networked Control Systems* (with A. Chiuso, L. Fortuna, S. Zampieri, L. Zenato).

EDITORIAL AND
REVIEWING
ACTIVITIES

Associate editor for the *IEEE Control and Systems Letters*

Associate editor for the *IEEE Transactions on Control of Network Systems*

Senior editor-at-large for the *Journal of Intelligent and Robotic*

Systems (Springer)
Associate editor for the ASME Journal of Dynamic Systems, Measurements, and Control
Associate editor for PlosONE, complexity track
Associate editor for the Journal of Computational Science (Elsevier)
Member of the Conference Editorial Board (equivalent to Associate Editor) of the IEEE Control Systems Society
Proposal reviewer for the Israeli Science Foundation
Proposal reviewer for the National Science Foundation, Switzerland
Proposal reviewer for the National Science Foundation, Czech Republic
Proposal reviewer for the National Science Foundation, USA
Member of the Editorial Board of *Frontiers*, an open access journal of the *Nature Publishing Group* (www.frontiersin.org)
Lead guest editor of *Applied Network Science* (Springer), special issue on “Complexity and the City”, 2019
Guest editor of *IEEE Systems Journal*, special issue on “Complexity in Engineering: from Complex Systems Science to Complex Systems Technology”, vol. 6. no. 3, September 2012
Guest Editor of the *European Journal of Industrial Engineering* (Inderscience), special issue on “Multidisciplinary Design Optimization: bridging the gap between theory and practice in an industrial and systems engineering perspective”
Journal reviewer for many international journals, among which: *Applied Network Science*, *Artificial Intelligence in Medicine*, *ASME Journal of Dynamical Systems, Measurements, and Control*, *Automatica*, *Chaos*, *Control Engineering Practice*, *European Journal of Computational Intelligence Research*, *European Journal of Industrial Engineering*, *Fuzzy Sets and Systems*, *IEEE Robotics and Automation Letters*, *IEEE Transactions on Aerospace and Electronic Systems*, *IEEE Transactions on Automatic Control*, *IEEE Transactions on Circuits and Systems Part I*, *IEEE Transactions on Control of Network Systems*, *IEEE Transactions on Control Systems Technology*, *IEEE Transactions on Intelligent Transportation Systems*, *IEEE Transactions on Network Science and Engineering*, *IEEE Transactions on Nuclear Science*, *IEEE Transactions on Plasma Science*, *IEEE Transactions on Robotics*, *IEEE Transactions on Systems, Man and Cybernetics*, *IEEE Transactions on Vehicular Technology*, *International Journal of Control*, *International Journal of Systems Science*, *Journal of Nonlinear Science*, *Linear*

Algebra and its Applications, Mechanism and Machine Theory, Nonlinear Dynamics, Physica A, Physica D, Physical Review E, Physical Review Letters, Physics Letters A, Robotics and Autonomous Systems, Soft Computing: Fusion of Foundations, Methodologies, and Applications.

Conference reviewer for many international conferences, especially IFAC and IEEE, among which *ACC American Control Conference, CDC Conference on Decision and Control, CNNA Cellular Neural Networks and Applications, ECC European Control Conference, ETFA IEEE International Conference on Emerging Technologies and Factory Automation, ICINCO International Conference on Informatics in Control, Automation and Robotics, IEEE/RSJ International Conference on Intelligent Robots and Systems, ICRA International Conference on Robotics and Automation, IROS International Conference on Robotics and Systems, IEEE MSC Multiconference on Systems and Control, IEEE SMC Systems, Man, and Cybernetics, ISCAS International Symposium on Circuits and Systems, IFAC World Congress, NOLTA Nonlinear Theory and Applications.*

Review Committee Member (conference associate editor) for the *IEEE ISCAS, International Symposium on Circuits and Systems*, from 2000 to 2010, and of the *IEEE MSC2011, Multiconference on Systems and Control.*

RESEARCH PARTNERS

Present

- New York University Tandon School of Engineering, Brooklyn, NY, USA
- Bar-Ilan University, Israel
- University of Denver, CO, USA
- Massachusetts Institute of Technology, Cambridge, MA, USA
- Leonardo (former Finmeccanica), Aircraft Division Project
- TIM (Telecom Italia) Joint Open Labs “Swarm” and “Crab”
- Institute of Complex Systems, National Research Council, Rome, Italy
- Delft Center for Systems and Control, Delft University of Technology, Delft, The Netherlands
- Laboratoire d’Analyse et d’Architecture des Systèmes, Centre National de la Recherche Scientifique (LAAS-CNRS), Toulouse, France
- Department of Electrical, Electronic and Computer Engineering, University of Catania, Catania, Italy

Past (selected)

- Greenwich University, London, UK

- National Research Council, Institute for Intelligent Systems and Automation (CNR-ISSIA), Bari, Italy
- Autonomous Robotics and Human-Machine Systems group, Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany
- Department of Mathematical Sciences, Kent State University, Kent, OH, USA
- Mathematics Department, University of Messina, Italy
- JET Joint Undertaking, Abingdon, UK
- ENEA-FTU, Controlled Thermo-nuclear Fusion Division, Frascati, Italy
- National Institute of Optics (National Research Council), Florence, Italy
- Institute for Complex Systems (National Research Council), Florence, Italy
- National Institute of Geophysics and Vulcanology (National Research Council), Catania, Italy
- FIAT Research Center, Valenzano, Bari, Italy
- DIAMEC Technology srl, Bari, Italy
- ICAM srl, Putignano, Bari, Italy
- ST Microelectronics, Catania, Italy

LANGUAGES

English: Fluent (European level C2)

French: Fluent (European level C1)

Spanish: Intermediate reading and comprehension (European level B1), basic speaking (European level A2)

Italian: Mother tongue

OTHER

Country of Citizenship: Italy