Gennaro Notomista
Curriculum Vitæ

Contact

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Current position

Assistant Professor
Varma Family Professor in Robotics
Department of Electrical and Computer Engineering
University of Waterloo

Member

- Waterloo Climate Institute
- Waterloo Institute for Sustainable Energy
- Waterloo Institute for Sustainable Aeronautics

Previous positions

- Nov 2021 – Dec 2021: Visiting scholar, Technische Hochschule Ingolstadt, Ingolstadt, Germany
- Nov 2020 – Sep 2021: Postdoctoral researcher, CNRS, Rennes, France
- Jul 2019 – Aug 2019: Visiting scholar, Stanford University, Stanford, CA, USA
- May 2017 – Aug 2020: Graduate research assistant, Georgia Institute of Technology, Atlanta, GA, USA
- Jan 2017 – Aug 2020: Member of the Robotarium team, Georgia Institute of Technology, Atlanta, GA, USA
- Jan 2016 – Jun 2016: Intern, Istituto Italiano di Tecnologia, Genova, Italy
- Jul 2015 – Dec 2015: Research assistant, Technische Hochschule Ingolstadt, Ingolstadt, Germany
- Jul 2015 – Dec 2015: Intern, Audi AG, Ingolstadt, Germany
- Dec 2014 – Mar 2015: Intern, BFFT, Ingolstadt, Germany

Education

- Ph.D. in Robotics, Georgia Institute of Technology, Aug 2020
- M.S. in Mathematics, Georgia Institute of Technology, Dec 2019
- M.S. in Mechanical Engineering, Università degli Studi di Napoli Federico II, Jan 2016
- M.Eng. in Automotive Engineering, Technische Hochschule Ingolstadt, Mar 2015
- B.S. in Mechanical Engineering, Università degli Studi di Napoli Federico II, Sep 2012

Research interests

Robotics

- Robot design and control for long-duration autonomy
- Resilient heterogeneous multi-robot systems
- Human-multi-robot interaction

Control theory

- Optimization-based control design
- Safety of dynamical systems

Teaching

Courses developed (University of Waterloo)

- Special Topics in Control: Robot Dynamics and Control (ECE 780 T03, graduate)
- Special Topics in Control: Sampled Data Control Systems (ECE 780 T01, graduate)

Course instructor (University of Waterloo)

- Robot Dynamics and Control (ECE 486, undergraduate)
- Digital Control Systems (ECE 481, undergraduate)
- Analog Control Systems (ECE 380, undergraduate)
- Introduction to Feedback Control (SE 380, undergraduate)

Short courses

- Optimization-based Control of Robotic Systems, minicourse at the Escola de Matemática Aplicada, Fundação Getulio Vargas (FGV EMAp), Rio de Janeiro, Brazil, January 16–27, 2023

Guest lecturer (Georgia Institute of Technology)

- Nonlinear Systems and Control (ECE 6552, graduate)
- Introduction to Automation and Robotics (ECE 4560, undergraduate)
- Robotics (ME 4451, undergraduate)

Invited talks and seminars

- "Analytic Center Controller Selection for Long-term Autonomy and Robot Ecology", Nagoya Institute of Technology, July 2025
- "Analytic Center Selection of Optimization-based Controllers for Robot Ecology", Georgia Institute of Technology, Oct 2024
- "Constrained Learning and Prioritized Execution of Multi-robot Tasks", Workshop "Confluence of Learning and Control Approaches in Multi-Agent Systems", American Control Conference, Jul 2024
- "Analytic Center Selection of Optimization-based Controllers for Robot Ecology", Tokyo Institute of Technology, May 2024
- "Analytic Center Selection of Optimization-based Controllers for Robot Ecology", Università degli Studi di Napoli Federico II, Apr 2024
- "Learning to Execute Prioritized Stacks of Robotic Tasks", Waterloo.AI, Jun 2023
- "Robotic System Design for Long-duration Autonomy", University of California, Irvine, Mar 2023
- "Design of Robotic Swarms for Long-term Environmental Monitoring", Université catholique de Louvain, Feb 2023
- "Ecologically-inspired Robots for Long-term Environmental Monitoring", Workshop "Mathematical Foundations of Robot Control", Latin American Congress on Industrial and Applied Mathematics, Feb 2023
- "Resilient and Energy-aware Multi-robot Environmental Monitoring", Tokyo Institute of Technology, Oct 2022
- "The SlothBot: Design and Control for Long-duration Autonomy", Workshop "Robotics for Conservation", AUVSI Xponential, Apr 2022
- "Control Design for Long-duration Robot Autonomy", University of Bristol, May 2021
- ——, University of Waterloo, Apr 2021
- ——, Heriot-Watt University, Apr 2021
- ——, Trinity College Dublin, Mar 2021
- ——, The University of Texas at Austin, Apr 2020

- "Constraint-driven Control of Multi-robot Systems. From the Otium-negotium Duality to the SENNA-PROST duel", Multi-Robot Systems Lab, Stanford University, Jul 2019
- "Control Barrier Functions for Enabling Long-Duration Robot Autonomy", Tutorial "Control Barrier Functions: Theory and Applications", European Control Conference, Jun 2019
- "Obtaining Control Barrier Functions for Systems Subject to Actuation Constraints", Tutorial "Control Barrier Functions: Theory and Applications", European Control Conference, Jun 2019
- "Control of Multi-robot Systems: From Rendez-vous to Long-duration Autonomy", Università degli Studi di Napoli Federico II, May 2019

Professional activities

Conference workshop, tutorial, and special session organization

- Special session "Optimizing Traffic Control for Smart Cities", Latin American Congress on Industrial and Applied Mathematics, 2026
- Minisymposium "Learning and control for robotics systems", Canadian Applied and Industrial Mathematics Society Annual Meeting, 2024
- Workshop "Control Barrier Functions: Recent Developments and Future Directions", IEEE Conference on Decision and Control, 2023
- Tutorial "Ecologically-Inspired Multi-Robot Systems", IFAC World Congress, 2023
- Research in residence, "Analysis of optimization-based feedback control systems", Centre International de Rencontres Mathématiques, 2023
- Special session "Mathematical foundations of robot control", Latin American Congress on Industrial and Applied Mathematics, 2023
- Workshop "Human-Multi-Robot Systems: Challenges for Real World Applications", IEEE/RSJ International Conference on Intelligent Robots and Systems, 2022
- Workshop "Design, Learning, and Control for Safe Human-Robot Collaboration", International Conference on Advanced Robotics, 2021
- Workshop "Robot Swarms in the Real World: From Design to Deployment", IEEE International Conference on Robotics and Automation, 2021
- Tutorial "Control Barrier Functions: Theory and Applications", European Control Conference, 2019

Program committees

- International Conference on Swarm Intelligence (ANTS), 2026
- American Control Conference (ACC), 2024
- International Symposium on Distributed Autonomous Robotic Systems (DARS), 2022
- International Workshop on Human-Friendly Robotics (HFR), 2020

Other committees

- Student Best Paper Award Committee, IEEE Technical Committee on Aerospace Control, 2024
- Student Best Paper Award Committee, American Control Conference, 2023
- Undergraduate Studies Committee, Department of Electrical and Computer Engineering, University of Waterloo, 2022 – 2024

Editor

- Area Chair, IEEE International Symposium on Multi-Robot and Multi-Agent Systems, area "Robustness, Formal Methods, Network Resilience", 2025
- Associate Editor, Soil Use and Management, 2025 – present
- Associate Editor, IEEE International Conference on Robotics and Automation, area "Mechanisms, Design, and Control", 2024 – 2025

- Associate Editor, IEEE/RSJ International Conference on Intelligent Robots and Systems, area "Multiple and Distributed Systems", 2023 – 2024
- Associate Editor, International Journal of Robotics Research, area "Multiple and Distributed Systems", 2023 – 2024
- Guest Editor, Advanced Robotics, Special issue "Recent Advances in Nonlinear Control Technology", 2023 – present
- Associate Editor, IEEE Robotics and Automation Letters, area "Multiple and Distributed Systems", 2021 – present
- Guest Editor, Autonomous Robots, Special issue "Robot Swarms in the Real World: from Design to Deployment", 2021 – present

Reviewer

- Journals (selected): IEEE Transactions on Robotics, Autonomous Robots, Robotics and Autonomous Systems, IEEE Robotics and Automation Letters, IEEE Robotics & Automation Magazine, IEEE Transactions on Automatic Control, IEEE Transactions on Control of Network Systems, IEEE Transactions on Control Systems Technology, Automatica, International Journal of Robust and Nonlinear Control, IEEE Control Systems Letters, IEEE Transactions on Human-Machine Systems, IEEE Transactions on Vehicular Technology
- Conferences (selected): IEEE International Conference on Robotics and Automation, IEEE/RSJ International Conference on Intelligent Robots and Systems, Robotics: Science and Systems, International Symposium on Multi-Robot and Multi-Agent Systems, IEEE Conference on Decision and Control, American Control Conference, European Control Conference, IFAC World Congress

Professional memberships and affiliations

- Institute of Electrical and Electronics Engineers (IEEE), IEEE Robotics and Automation Society, IEEE Control Systems Society
- American Society of Mechanical Engineers (ASME) Dynamic Systems and Control Division (DSCD) Energy Systems Technical Committee (ESTC)
- International Federation of Automatic Control (IFAC)

Student guidance

Doctoral students

2. Longchen Niu, PhD, University of Waterloo, Topic: PDE-based distributed control of robotic swarms

1. Andrew Adel Shenouda Nasif, PhD, University of Waterloo, Topic: Design and control of symbiotic heterogeneous robotic systems

Master students

8. Kaurisan Selvarasa, MEng, University of Waterloo, Topic: Design and control of wheeled drones

7. Jingde Cheng, MEng 2025, University of Waterloo, Topic: Music-painting robotic swarms

6. Ziyi Wang, MMath 2025, University of Waterloo, Topic: Learning PDE-based control of robotic swarms

5. Sheikh Abrar Tahmid, MASc, University of Waterloo, Topic: Multi-task multi-robot learning

4. Ramisha Anjum, MASc 2024, University of Waterloo, Topic: Human-multi-robot interaction for long-term environmental monitoring

3. Justine Shaw, MASc 2024, University of Waterloo, Topic: Ecological robot design for long-term environmental monitoring

2. Divyesh Kanagavel, M.S. 2021, CNRS, Topic: Human-multi-robot interaction for collaborative grasping

1. Hussein Lezzaik, M.S. 2021, CNRS, Topic: Multi-robot reinforcement learning for active sensing

Undergraduate students

4. Aadila Ali Sabry, Spring 2025, University of Waterloo, Topic: Stability of tracking controllers for autonomous vehicles

3. Rishith Bomman, Fall 2024 – Spring 2025, University of Waterloo, Topic: Design of a robot sloth

2. Gabriel Luo, Fall 2023 – Winter 2024, University of Waterloo, Topic: Safe and computationally efficient control of autonomous vehicles

1. Cheng Tang, Fall 2022 – Winter 2023, University of Waterloo, Topic: Reinforcement learning for multi-robot environmental monitoring, software backend for environmental monitoring data handling

High-school students

3. Muhammad Ahmed, Chinedum Onwughalu, Safeer Rafique, Spring 2025, University of Waterloo, Topic: Dynamic grasping with robot swarms

2. Adam Colwell, Fall 2024 – Winter 2025, University of Waterloo, Topic: Design of a mobile painting robot

1. Yoyo Yuan, Sean Wang, Winter 2023 – Spring 2023, University of Waterloo, Topic: Human gestures recognition for human-multi-robot interaction

Scholarships and awards

Scholarships

- Alumni Small Grant Program 2020 "What can robots teach us about the Covid-19 pandemic", Sep 2020 – Dec 2021
- DAAD scholarship for research stays for university academics and scientists, Nov 2021 – Feb 2022
- Fulbright scholarship, Sep 2016 – Jun 2017
- DAAD scholarship B1, Jul 2015 – Dec 2015
- DAAD scholarship A1, Oct 2013 – Mar 2015

Awards

- Best Paper Award, 2022 IEEE International Conference on Advanced Robotics and its Social Impacts, May 2022
- Best Paper Award Finalist, 2019 IEEE International Symposium on Multi-Robot and Multi-Agent Systems, Aug 2019
- NSF travel award to attend the 2019 IEEE International Symposium on Multi-Robot and Multi-Agent Systems
- Study award "Roberto Rocca Educational Program", Jul 2015
- Study award "Roberto Rocca Educational Program", Jul 2013
- 3rd place in the Italian Mathematics competition "MeravigliosaMenteMatematica", Apr 2009
- Rotary International "Premiazioni alunni meritevoli", Nov 2008

Publications

Journal articles

A23. T. Ito, R. Funada, M. Sampei, and G. Notomista, "Energy-Aware Task Allocation for Teams of Multi-mode Robots", *IEEE Control Systems Letters, Vol. 9, pp. 1964-1969, 2025*

A22. M.T. Chiri, R. Guglielmi, and G. Notomista, "Boundary Control for Stability and Invariance of Traffic Flow Dynamics: A Convex Optimization Approach", *IEEE Control Systems Letters, Vol. 9, pp. 1333–1338, 2025*

A21. L. Niu and G. Notomista, "Decentralized Density Control of Robotic Swarms Using PDE-constrained Optimization", *IEEE Robotics and Automation Letters, Vol. 10, No. 4, pp. 4045–4052, 2025*

A20. G. Notomista, P. T. Choi, and M. Saveriano, "Reactive Robot Navigation Using Quasi-conformal Mappings and Control Barrier Functions", *IEEE Transactions on Control Systems Technology, Vol. 33, No. 3, pp. 928–939, 2025*

A19. Y. Emam, G. Notomista, P. Glotfelter, Z. Kira, and M. Egerstedt, "Safe Reinforcement Learning Using Robust Control Barrier Functions", *IEEE Robotics and Automation Letters, Vol. 10, No. 3, pp. 2886–2893, 2025*

A18. Z. Hao, S. Mayya, G. Notomista, S. Hutchinson, M. Egerstedt, and A. Ansari, "Controlling Collision-Induced Aggregations in a Swarm of Micro Bristle-Robots", *IEEE Transactions on Robotics, Vol. 39, No. 1, pp. 590–604, 2022*

A17. Y. Emam, P. Glotfelter, S. Wilson, G. Notomista, and M. Egerstedt, "Data-Driven Robust Barrier Functions for Safe, Long-Term Operation", *IEEE Transactions on Robotics, Vol. 38, No. 3, pp. 1671–1685, 2021*

A16. G. Notomista, C. Pacchierotti, and P. Robuffo Giordano, "Online Robot Trajectory Optimization for Persistent Environmental Monitoring", *IEEE Control Systems Letters, Vol. 6, pp. 1472–1477, 2021*

A15. G. Notomista, S. Mayya, Y. Emam, C. Kroninger, A. Bohannon, S. Hutchinson, and M. Egerstedt, "A Resilient and Energy-Aware Task Allocation Framework for Heterogeneous Multi-Robot Systems", *IEEE Transactions on Robotics, Vol. 38, No. 1, pp. 159–179, 2021*

A14. G. Notomista and M. Saveriano, "Safety of Dynamical Systems with Multiple Non-Convex Unsafe Sets Using Control Barrier Functions", *IEEE Control Systems Letters, Vol. 6, pp. 1136–1141, 2021*

A13. S. Wilson, P. Glotfelter, S. Mayya, G. Notomista, Y. Emam, X. Cai, and M. Egerstedt, "The Robotarium: Automation of a Remotely Accessible, Multi-Robot Testbed", *IEEE Robotics and Automation Letters, Vol. 6, No. 2, pp. 2922–2929, 2021*

A12. M. Ohnishi, G. Notomista, M. Sugiyama, and M. Egerstedt, "Constraint learning for control tasks with limited duration barrier functions", *Automatica, Vol. 127, 2021*

A11. G. Notomista and M. Egerstedt, "Persistification of robotic tasks", *IEEE Transactions on Control Systems Technology, Vol. 29, No. 2, pp. 756–767, 2021*

A10. M. Santos, G. Notomista, S. Mayya, and M. Egerstedt, "Interactive Multi-Robot Painting Through Colored Motion Trails", *Frontiers in Robotics and AI, 7, 143, 2020*

A9. A. Ames, G. Notomista, Y. Wardi, and M. Egerstedt, "Integral Control Barrier Functions for Dynamically Defined Control Laws", *IEEE Control Systems Letters, Vol. 5, No. 3, pp. 887–892, 2020*

A8. R. Funada, X. Cai, G. Notomista, M. W. Surya Atman, J. Yamauchi, M. Fujita, and M. Egerstedt, "Coordination of robot teams over long distances. From Georgia Tech to Tokyo Tech and back: An 11,000 km multi-robot experiment", *IEEE Control Systems Magazine, Vol. 40, No. 4, pp. 53–79, 2020*

A7. S. Wilson, P. Glotfelter, L. Wang, S. Mayya, G. Notomista, M. Mote, and M. Egerstedt, "The Robotarium: Globally impactful opportunities, challenges, and lessons learned in remote-access, distributed control of multi-robot systems", *IEEE Control Systems Magazine, Vol. 40, No. 1, pp. 26–44, 2020*

A6. M. Ohnishi, L. Wang, G. Notomista, and M. Egerstedt, "Safety-aware adaptive reinforcement learning with applications to brushbot navigation", *IEEE Transactions on Robotics, Vol. 35, No. 5, pp. 1186–1205, 2019*

A5. G. Notomista, Y. Emam, and M. Egerstedt, "The SlothBot: A novel design for a wire-traversing robot", *IEEE Robotics and Automation Letters, Vol. 4, No. 2, pp. 1993–1998, 2019*

A4. M. Egerstedt, J. Pauli, G. Notomista, and S. Hutchinson, "Robot ecology: Constraint-based control design for long duration autonomy", *Annual Reviews in Control, Vol. 46, pp. 1–7, 2018*

A3. G. Notomista, S. Ruf, and M. Egerstedt, "Persistification of robotic tasks using control barrier functions", *IEEE Robotics and Automation Letters, Vol. 3, No. 2, pp. 758–763, 2018*

A2. G. Notomista and M. Botsch, "A machine learning approach for the segmentation of driving maneuvers and its application in autonomous parking", *Journal of Artificial Intelligence and Soft Computing Research, Vol. 7, No. 4, pp. 243–255, 2017*

A1. G. Notomista, M. Selvaggio, F. Sbrizzi, G. Di Maio, S. Grazioso, and M. Botsch, "A fast airplane boarding strategy using online seat assignment based on passenger classification", *Journal of Air Transport Management, Vol. 53, pp. 140–149, 2016*

Book chapters

B1. G. Notomista and X. Cai, "A Safety and Passivity Filter for Robot Teleoperation Systems", *In M. Saveriano, E. Renaudo, A. Rodríguez-Sánchez, and J. Piater (editors), Human-Friendly Robotics 2020, Cham, 2021. Springer International Publishing*

Conference proceedings papers

C37. S. A. Tahmid and G. Notomista, "Necessary and Sufficient Conditions for the Optimization-Based Concurrent Execution of Learned Robotic Tasks", *American Control Conference, 2026*

C36. L. Niu and G. Notomista, "Safe Decentralized Density Control of Multi-Robot Systems using PDE-Constrained Optimization with State Constraints", *IEEE International Symposium on Multi-Robot and Multi-Agent Systems, 2025*

C35. S. Tanaka, S. Nakano, G. Notomista, and M. Yamada, "Stable Haptic Shared Autonomy for Wall Landing of Two-Wheeled Drones via Control Barrier Functions", *Annual Conference of the IEEE Industrial Electronics Society, 2025*

C34. J. Cheng and G. Notomista, "Music-driven Robot Swarm Painting", *IEEE International Conference on Advanced Robotics and its Social Impacts, 2025*

C33. A. Nasif and G. Notomista, "Energy-Aware Coordination of Heterogeneous Robotic Systems with Mobile Charging Stations for Long-Term Environmental Monitoring", *Mediterranean Conference on Control and Automation, 2025*

C32. Z. Wang, R. Guglielmi, and G. Notomista, "Decentralized Control of Robotic Swarm Density via PDE-Constrained Optimization", *Mediterranean Conference on Control and Automation, 2025*

C31. R. Anjum and G. Notomista, "Optimization-based Haptic Feedback Synthesis for Passive Human-multi-robot Systems", *Mediterranean Conference on Control and Automation, 2025*

C30. S. A. Tahmid and G. Notomista, "Value Iteration for Learning Concurrently Executable Robotic Control Tasks", *International Conference on Autonomous Agents and Multi-Agent Systems, 2025*

C29. J. Shaw and G. Notomista, "Design and Density Control of a Swarm of Bimodal Particles", *International Symposium on Distributed Autonomous Robotic Systems, 2024*

C28. G. Notomista, "Stable, Safe, and Passive Teleoperation of Multi-Robot Systems", *IEEE International Conference on Robotics and Automation, 2024*

C27. G. Notomista and Y. Wardi, "A Safe and Computationally Efficient Tracking Control Algorithm for Autonomous Vehicles", *American Control Conference, 2024*

C26. G. Notomista, "Relaxed Pfaffian Constraints with Application to the Minimum-Energy Control of Swarms of Brushbots", *American Control Conference, 2023*

C25. G. Notomista, "A Constrained-Optimization Approach to the Execution of Prioritized Stacks of Learned Multi-Robot Tasks", *International Symposium on Distributed Autonomous Robotic Systems, 2022*

C24. G. Notomista and S. Mayya, "What Can Robots Teach Us About The COVID-19 Pandemic? Interactive Demonstrations of Epidemiological Models Using a Swarm of Brushbots", *IEEE International Conference on Advanced Robotics and its Social Impacts, 2022*

C23. G. Notomista, "Resilience and Energy-Awareness in Constraint-Driven-Controlled Multi-Robot Systems", *American Control Conference, 2022*

C22. G. Notomista, C. Pacchierotti, and P. Robuffo Giordano, "Multi-Robot Persistent Environmental Monitoring Based on Constraint-Driven Execution of Learned Robot Tasks", *IEEE International Conference on Robotics and Automation, 2022*

C21. G. Notomista and M. Saveriano, "On the Safety of Dynamical Systems with Multiple Non-Convex Unsafe Sets", *Human-Friendly Robotics, 2021*

C20. Y. Emam, G. Notomista, P. Glotfelter, and M. Egerstedt, "Data-Driven Adaptive Task Allocation for Heterogeneous Multi-Robot Teams Using Robust Control Barrier Functions", *IEEE International Conference on Robotics and Automation, 2021*

C19. G. Notomista and M. Egerstedt, "Communication constrained distributed spatial field estimation using mobile sensor networks", *IFAC World Congress, 2020*

C18. G. Notomista, M. Wang, M. Schwager, and M. Egerstedt, "Enhancing game-theoretic autonomous car racing using control barrier functions", *IEEE International Conference on Robotics and Automation, 2020*

C17. G. Notomista, S. Mayya, M. Selvaggio, M. Santos, and C. Secchi, "A set-theoretic approach to multi-task execution and prioritization", *IEEE International Conference on Robotics and Automation, 2020*

C16. Y. Emam, S. Mayya, G. Notomista, A. Bohannon, and M. Egerstedt, "Adaptive task allocation for heterogeneous multi-robot teams with evolving and unknown robot capabilities", *IEEE International Conference on Robotics and Automation, 2020*

C15. G. Notomista, S. Mayya, A. Mazumdar, S. Hutchinson, and M. Egerstedt, "A study of a class of vibration-driven robots: Modeling, analysis, control and design of the brushbot", *IEEE/RSJ International Conference on Intelligent Robots and Systems, 2019*

C14. S. Mayya, G. Notomista, D. Shell, S. Hutchinson, and M. Egerstedt, "Non-uniform robot densities in vibration driven swarms using phase separation theory", *IEEE/RSJ International Conference on Intelligent Robots and Systems, 2019*

C13. G. Notomista, X. Cai, J. Yamauchi, and M. Egerstedt, "Passivity-based decentralized control of multi-robot systems with delays using control barrier functions", *IEEE International Symposium on Multi-Robot and Multi-Agent Systems, 2019*

C12. M. Santos, S. Mayya, G. Notomista, and M. Egerstedt, "Decentralized minimum-energy coverage control for time-varying density functions", *IEEE International Symposium on Multi-Robot and Multi-Agent Systems, 2019*

C11. G. Notomista, S. Mayya, S. Hutchinson, and M. Egerstedt, "An optimal task allocation strategy for heterogeneous multi-robot systems", *European Control Conference, 2019*

C10. A. Ames, S. Coogan, M. Egerstedt, G. Notomista, K. Sreenath, and P. Tabuada, "Control barrier functions: Theory and applications", *European Control Conference, 2019*

C9. G. Notomista and M. Egerstedt, "Constraint-driven coordinated control of multi-robot systems", *American Control Conference, 2019*

C8. G. Notomista, M. Santos, S. Hutchinson, and M. Egerstedt, "Sensor coverage control using robots constrained to a curve", *IEEE International Conference on Robotics and Automation, 2019*

C7. G. Notomista and M. Egerstedt, "Coverage control for wire-traversing robots", *IEEE International Conference on Robotics and Automation, 2018*

C6. M. Selvaggio, S. Grazioso, G. Notomista, and F. Chen, "Towards a self-collision aware teleoperation framework for compound robots", *IEEE World Haptics Conference, 2017*

C5. F. Sbrizzi, S. Grazioso, M. Selvaggio, G. Di Maio, and G. Notomista, "Enhancing airplane boarding procedure using vision based passenger classification", *IEEE International Conference on Intelligent Transportation Systems, 2016*

C4. M. Selvaggio, G. Notomista, F. Chen, B. Gao, F. Trapani, and D. Caldwell, "Enhancing bilateral teleoperation using camera-based online virtual fixtures generation", *IEEE/RSJ International Conference on Intelligent Robots and Systems, 2016*

C3. M. Selvaggio, F. Chen, B. Gao, G. Notomista, F. Trapani, and D. Caldwell, "Vision based virtual fixture generation for teleoperated robotic manipulation", *IEEE International Conference on Advanced Robotics and Mechatronics, 2016*

C2. G. Notomista, A. Kammenhuber, P. Nadarajan, M. Botsch, and M. Selvaggio, "Relative motion estimation based on sensor eigenfusion using a stereoscopic vision system and adaptive statistical filtering", *VDE International Symposium on Robotics, 2016*

C1. G. Notomista and M. Botsch, "Maneuver segmentation for autonomous parking based on ensemble learning", *IEEE International Joint Conference on Neural Networks, 2015*

Conference workshops papers

D3. G. Notomista, S. Mayya, Y. Emam, C. Kroninger, A. Bohannon, S. Hutchinson, and M. Egerstedt, "A Resilient and Energy-Aware Task Allocation Framework for Heterogeneous Multi-Robot Systems", *Workshop "Heterogeneous Multi-Robot Task Allocation and Coordination" at Robotics: Science and Systems, 2020*

D2. S. Mayya, G. Notomista, and M. Egerstedt, "Optimal task allocation in heterogeneous multi-robot systems using a mixed centralized/decentralized strategy", *Workshop "Resilient Robot Teams: Composing, Acting, and Learning" at IEEE International Conference on Robotics and Automation, 2019*

D1. M. Selvaggio and G. Notomista, "Towards natural human-swarm teleoperation using hand synergies", *Workshop "Swarms: From Biology to Robotics and Back" at IEEE International Conference on Robotics and Automation, 2018*

Patents

- G. Notomista, M. Egerstedt, Y. Emam, Wire-Traversing Robot and Method of Operation, U.S. Patent No. 2022/0009532
- G. Notomista, S. Mayya, A. Mazumdar, S. Hutchinson, M. Egerstedt, The Brushbot: A Robust and Versatile Swarm Robotics Platform (pending)

Outreach

- Leveraging Robot Swarms for Biodiversity Monitoring and Conservation, Expo at IEEE International Conference on Robotics and Automation, May 2024
- Mentor for Women in AI & Robotics, 2022
- What can robots teach us about the COVID-19 pandemic at the public event "Futuro Remoto", Napoli, Italy, Nov 2021, `https://www.quixoticrobotics.org/futuro_remoto.html`
- La robotica contro il COVID-19 at Liceo "E. Pascal", Pompei, Italy, Sep 2021, `https://www.quixoticrobotics.org/robots_and_covid.html#la_robotica_contro_il_covid`

Media coverage

- Popular media (selected): BBC, CNN, PBS, The Wall Street Journal, Augsburger Allgemeine, Donaukurier
- Tech media (selected): IEEE Spectrum, Robohub, Communications of the ACM, Design World, New Atlas, New Electronics, PBS NOVA, Popular Mechanics, R&D Magazine, Robot Report, Science Daily, Tech Briefs, TechXplore, World Economic Forum, ZME Science

January 29, 2026