

EDUCATION

- Ph.D. in Robotics (2018)
- M.Sc. in Automation Engineering (2013)
- B.Sc. in Automation Engineering (2010)

CONTACT

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Based in Milan, Italy
List of publications: shorturl.at/mnvyL

EXPERIENCE

Research Fellow at Leonardo Labs - Leonardo S.p.a. - Italy

April 2021 - Present

- **Principal investigator (PI) unmanned systems**
 - Guided and managed a team of 8 research fellows (Ph.D. level), ensuring successful project outcomes; selected/hired new ones; roadmap definition; software architecture and infrastructure (ROS2, Docker, Python/C++); external/internal stakeholder management
 - Led the preparation of 3 EU proj. proposals, 2 PNRR; working on 1 EU project, 1 EDF project, 2 PNRR;
- **Development of external situational awareness of rotary-wing platforms**
 - Selected and used high-fidelity simulation environments for helicopters; developed software (ROS2, Docker, python) for autonomous-flight functions (AI, Computer Vision, Sensor Fusion, Deep Learning)
 - Led the preparation of 2 EU proposals (currently pursuing the implementation of 1 of them)

Postdoctoral Researcher at EPFL - Switzerland

August 2018 - March 2021

- **Lead a research project on a reconfigurable modular drone for transportation**
 - Developed the software in Python, ROS, and PX4. Tested it both in Gazebo Software-In-The-Loop simulations and with a real custom-built drone ([link](#))
- **Lead a research project on the use of drones for bird management** ([link](#))
- **Lead the Aerial Drone Swarms research line at EPFL**
- **Main organizer of the 1st Aerial Swarms workshop at the IEEE/RSJ IROS 2020 conference** ([link](#))
- **Wrote national and international grant proposals related to drones**
 - Lead the preparation of grant proposals: coordinator of 1 EU-H2020-MSCA-ETN; technical WP lead of 1 EU-H2020-RIA; 1 Swiss National Science Foundation (SNSF) grant; 1 grant with the Swiss army
- **Organized and lectured the Aerial Robotics course** (robotics Master at EPFL)
- **Supervised 3 Ph.D. students (2 in Aerial Swarms and 1 in Human-Robot Interaction) and several master's students**
- **Co-authored several research articles** ([google scholar](https://scholar.google.com/citations?user=8YUW8wYAAAAJ))

Postdoctoral Researcher at CNRS/INRIA Rennes - France

February 2018 - July 2018

- **Control of a group of drones focusing on their navigation through camera measurements**

Ph.D. Student at INRIA Rennes and University of Rennes 1 - France

October 2014 - January 2018

- **Bearing-based Localization and Control for Multiple Drones** ([link](#))
 - Developed the software in MATLAB, Simulink, ROS, and C++.
 - Tested the algorithms on a swarm of up to six rotary-wing UAVs

Visiting Ph.D. Student at Boston University - USA

January 2018 - June 2018

- **Multi-drones localization from bearing-only measurements based on differential geometry and nonlinear observability theory**

Research Scientist at the Zentrum Für Telematik - Germany

July 2013 - August 2014

- **Created a control system for Dielectric Elastomer Generators (DEGs) in energy harvesting**
- **Prepared international grant proposals** (EU-H2020-FP7)
- **Supervised Master students of the European master in space science and technology**

Master's visiting student at ETH Zurich (ETHZ) - Switzerland

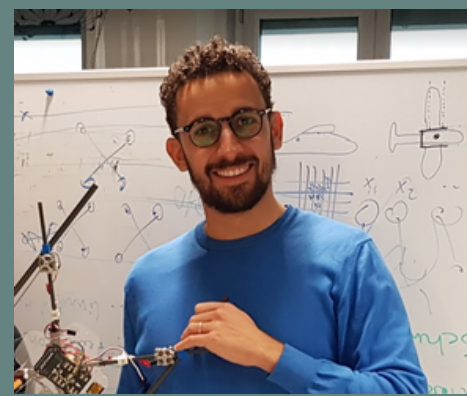
October 2012 - April 2013

- **Estimation and Correction of Wind Effects on a Quadrotor UAV**
 - Project carried out in collaboration with ETHZ, Disney Research Zurich and University of Naples
 - Developed an LQR-LQRI flight controller coupled with a Kalman filter to estimate wind
 - Carried out wind tunnel tests to identify the drone's aerodynamic model

Bachelor's Thesis - Centro Italiano Ricerche Aerospaziali (CIRA) - Italy

January 2010 - May 2010

- **Algorithms for the decentralized coordination of drone swarms**



FABRIZIO SCHIANO

Project management experience and strong interpersonal skills.
Ph.D. and postdoc in robotics applied to single- and multi-drone systems.

ABOUT ME

I am excited about new technologies such as autonomous vehicles and their potential impact on society. I think to be a "people person" with strong interpersonal, persuasion, and conflict-resolution skills. I like to be around people both at work and in my private life.

I love having book recommendations.

MY JOB SKILLS

- Drones
- Project planning, management, and execution

- Flight controller stacks (PX4, TeleKyb)
- Python
- MATLAB/Simulink
- Robot Operating System (ROS, ROS2)
- Docker
- Motion Capture Systems (OptiTrack, Vicon)
- Operating Systems: Linux (Ubuntu) and Windows
- Control Theory
- State Estimation

- Technical writing (research articles and grant proposals)
- Proficient in LaTeX and MS Office
- Presentation and communication skills
- Languages:
 - Fluent in Italian, English, and French
 - Beginner in German and Portuguese

MY HOBBIES

- Sports: football, running half-marathons, biking, tennis, CrossFit
- Cooking: Italian and worldwide food (Neapolitan Pizza making expert)
- Reading: self-improvement, cooking, novels, history
- Podcasts: world news, economics, self-improvement, food
- Meditation

OTHER ACTIVITIES

Reviewer of Ph.D. theses, grant proposals, and research articles

February 2014 – Present

- **External expert for the Ph.D. defense of Kagan Erunsal at EPFL, invited by Prof. Alcherio Martinoli** (October 2023)
- **Official reviewer for EU-H2020 proposals and ERC grants**
- **Associated Editor for the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS)** (since March 2023)
- **Reviewer for the following journals:** Science Robotics, IEEE Transactions on Robotics, IEEE Robotics and Automation Letters (RA-L), IEEE Transactions on Cybernetics, Journal of Field Robotics, IEEE Transactions on Haptics, Elsevier Automatica, ASME Journal of Dynamic Systems, Measurement and Control, MDPI Applied Sciences, MDPI Drones, MDPI Energies, Frontiers in Mechanical Engineering.
- **Reviewer for the following conferences:** IEEE ICRA, IEEE/RSJ IROS, IEEE World Haptics Conference, IFAC World Congress

Ph.D. students representative of the INRIA Rennes research committee

February 2016 – July 2018

- **Elected representative of Ph.D. students of the research committee at INRIA Rennes**

LIST OF PUBLICATIONS

- B. Trimarchi, L. Gentilini, **F. Schiano**, and L. Marconi, Data-Driven Analytic Differentiation via High Gain Observers and Gaussian Process Priors, IEEE American Control Conference (ACC), 2023.
- **F. Schiano**, P. Kornatowski, L. Cencetti, D. Floreano, Reconfigurable drone system for transportation of parcels with variable mass and size, IEEE Robotics and Automation Letters (RA-L), 2022
- M. Macchini, J. Frogg, **F. Schiano**, D. Floreano, Does spontaneous motion lead to intuitive Body-Machine Interfaces? A fitness study of different body segments for wearable telerobotics, IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), 2022
- **F. Schiano**, D. Natter, D. Zambrano, D. Floreano, Autonomous detection and deterrence of pigeons on buildings by drones, IEEE Access, 2022
- E. Soria, **F. Schiano**, D. Floreano, Predictive Control of Aerial Swarms in Cluttered Environments, Nature Machine Intelligence, 2021
- M. Macchini, M. Lortkipanidze, F. Schiano, D. Floreano, The effects of virtual reality and viewpoint on embodiment and instinctive body motion for wearable teleoperation, IEEE Virtual Reality (VR) conference, 2021
- M. Pavliv, **F. Schiano**, C. Reardon, D. Floreano, G. Loianno, Tracking and Relative Localization of Drone Swarms with a Vision-based Headset, IEEE Robotics and Automation Letters (RA-L) and IEEE International Conference on Robotics and Automation (ICRA), 2021
- E. Soria, **F. Schiano**, D. Floreano, SwarmLab: a Matlab Drone Swarm Simulator, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020
- J.P. Queralta, C.M. Almansa, **F. Schiano**, D. Floreano, T. Westerlund, UWB-based system for UAV Localization in GNSS-Denied Environments: Characterization and Dataset, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020
- M. Macchini, T. Havy, A. Weber, **F. Schiano**, D. Floreano, Hand-worn Haptic Interface for Drone Teleoperation, IEEE International Conference on Robotics and Automation (ICRA), 2020
- V. Delafontaine, **F. Schiano**, G. Cocco, A. Rusu, D. Floreano, Drone-aided Localization in LoRa IoT Networks, IEEE International Conference on Robotics and Automation (ICRA), 2020
- M. Macchini, F. Schiano, D. Floreano, Personalized Telerobotics by Fast Machine Learning of Body-Machine Interfaces, IEEE Robotics and Automation Letters (RA-L), 2019
- F. Schilling, J. Lecoœur, **F. Schiano**, D. Floreano, Learning vision-based flight in drone swarms by imitation, IEEE Robotics and Automation Letters (RA-L), 2019
- E. Soria, **F. Schiano**, D. Floreano, The influence of limited visual sensing on the Reynolds flocking algorithm, IEEE International Conference on Robotic Computing (IRC), 2019
- F. Schilling, J. Lecoœur, **F. Schiano**, D. Floreano, Learning vision-based cohesive flight in drone swarms, arXiv preprint arXiv:1809.00543, 2019
- **F. Schiano**, R. Tron, The dynamic bearing observability matrix: nonlinear observability and estimation for multi-agent systems, IEEE International Conference on Robotics and Automation (ICRA), 2018
- **F. Schiano**, P. Robuffo Giordano, Bearing rigidity maintenance for formations of quadrotor UAVs, IEEE International Conference on Robotics and Automation (ICRA), 2017
- **F. Schiano**, A. Franchi, D. Zelazo, P. Robuffo Giordano, A rigidity-based decentralized bearing formation controller for groups of quadrotor UAVs, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2016
- **F. Schiano**, J. Alonso-Mora, K. Rudin, P. Beardsley, R. Siegwart, B. Siciliano, Towards estimation and correction of wind effects on a quadrotor UAV, International Micro Air Vehicle Conference and Competition (IMAV), 2014

INVITED TALKS

- October 2023: EPFL for Ph.D. defense Kagan Erunsal
- May 2023: University of Tor Vergata; Rome Cup
- January 2021: Robotics lab at the University of Leeds, UK
- June 2018: Laboratory of Intelligent Systems (EPFL), Switzerland –
- April 2018: Interdisciplinary Centre for Security, Reliability, and Trust (SnT), Luxembourg – Contact: Prof. Holger Voos

coursera ONLINE COURSES

- **Project Management:** Foundations of Project Management; Project Initiation: Starting a Successful Project; Project Planning: Putting It All Together
- **Deep Learning:** Convolutional Neural Networks; Structuring Machine Learning Projects; Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization; Neural Networks and Deep Learning;
- **Python:** Python basics; Python Functions, Files, and Dictionaries; Data Collection and Processing with Python;
- **Food:** Stanford Introduction to Food and Health