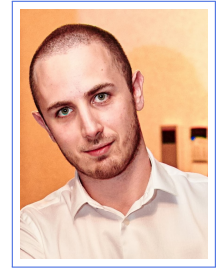


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Areas of specialisation

Control theory, model identification, state estimation, UAV flight control, UAV design.

Education

- Mar. 2019 – **LAAS-CNRS Toulouse, France**, *Visiting researcher*.
Jul, 2019 Title of the project: "*FAST-Hex: a Fully Actuated by Synchronized Tilting Hexarotor*", supervisor Antonio Franchi, Ph.D.
- Nov. 2016 – **Politecnico di Milano, Italy**, *Ph.D., Aerospace Engineering*.
Present Title of thesis: "*Design, integration and control of multirotor UAV platforms*", supervisor Prof. Marco Lovera
- Oct. 2013 – **Politecnico di Milano, Italy**, *M.Sc., Automation and Control Engineering*.
Dec. 2015
- Sep. 2010 – **Politecnico di Milano, Italy**, *B.Sc., Automation and Control Engineering*.
Oct. 2013

Teaching & research

- First semester AY 2018/19 **Politecnico di Milano, Italy**, *Teaching assistant in Estimation in Aerospace*.
M.Sc. course in Aeronautical Engineering/Space Engineering (8CFU), held by Prof. Marco Lovera
- First semester AY 2018/19 **Politecnico di Milano, Italy**, *Teacher of "UAV Lab"*.
Interdisciplinary course held together with Prof. Marco Lovera
- Jan. 2016 – **Politecnico di Milano, Italy**, *Research assistant at Department of Aerospace Science and Technologies*.
Nov. 2016 Title of the project: "*Modelling, identification and control of multirotor UAV*", supervisor Prof. Marco Lovera

Publications

Journal papers

- Very high accuracy attitude determination for LOS steering**, M. Giurato, S. Panza, M. Lovera, G. Sechi (*in preparation*).
- 2018 **Adaptive augmentation of the attitude control system for a multirotor UAV**, G. Bressan, A. Russo, D. Invernizzi, M. Giurato, S. Panza, and M. Lovera.
Journal of Aerospace Engineering

Conference papers

- 2019 **A computer vision line-tracking algorithm for UAV GNSS-aided guidance**, G. Roggi, M. Giurato, M. Lovera.
XXV AIDAA, International Congress, Roma, Italy, 2019

- UAV Lab: a multidisciplinary UAV design course**, *M. Giurato, P. Gattazzo, M. Lovera*.
21st IFAC Symposium on Automatic Control in Aerospace, Cranfield, UK, 2019
- Air-to-air automatic landing for multirotor UAVs**, *P. Giuri, A. Marini Cossetti, M. Giurato, D. Invernizzi, M. Lovera*.
5th CEAS Conference on Guidance, Navigation and Control, Milano, Italy
- 2018 **Robust filtering for very high accuracy attitude determination**, *M. Giurato, S. Panza, M. Lovera*.
58th Israel Annual Conference on Aerospace Sciences, Tel Aviv and Haifa, Israel, (accepted)
- Full pose tracking for a tilt-arm quadrotor UAV**, *D. Invernizzi, M. Giurato, P. Gattazzo, M. Lovera*.
IEEE Conference on Control Technology and Applications, Copenhagen, Denmark
- 2017 **Ground effect analysis for a quadrotor platform**, *D. Del Cont Bernard, M. Giurato, F. Riccardi, M. Lovera*.
4th CEAS Specialist Conference on Guidance, Navigation and Control, Warsaw, Poland
- A dynamic analysis of ground effect for a quadrotor platform**, *D. Del Cont Bernard, F. Riccardi, M. Giurato, M. Lovera*.
20th IFAC World Congress, Toulouse, France
- Accurate positioning of multirotor UAVs for civil infrastructure monitoring**, *D. Di Bacco, M. Giurato, M. Lovera*.
7th European Conference for Aeronautics and Space Sciences, Milano, Italy
- Very high accuracy attitude determination for LOS steering**, *F. Haydar, M. Giurato, M. Lovera, G. Sechi*.
10th International ESA Conference on Guidance, Navigation and Control Systems, Salzburg, Austria
- Adaptive augmentation of the attitude control system for a multirotor UAV**, *A. Russo, D. Invernizzi, M. Giurato, M. Lovera*.
7th European Conference for Aeronautics and Space Sciences, Milano, Italy
- 2016 **Quadrotor attitude determination: A comparison study**, *M. Giurato, M. Lovera*.
2016 IEEE Conference on Control Applications (CCA), Buenos Aires, Argentina
- 2015 **Low Cost MEMS IMU Calibration For Aerospace Student Activities**, *A. Rivolta, M. Giurato, F. Cuzzocrea, F. Rovere, and S. Farí*.
1st Symposium On Space Educational Activities

Book chapters

- 2018 **Ground effect analysis for a quadrotor platform**, *D. Del Cont Bernard, M. Giurato, F. Riccardi, M. Lovera*, *Advances in Aerospace Guidance, Navigation and Control*, Springer.

Thesis tutoring

- 2019 **Data-driven multivariable attitude control design for multirotor UAV platforms**, *A. Zangarini*, M.Sc. in Aeronautics Engineering.
- Adaptive control implementation to include ground effect on UAV simulator**, *U. Arshad*, M.Sc. in Aeronautics Engineering.
- UAV autonomous landing on a moving aerial vehicle**, *G. Gozzini*, M.Sc. in Aeronautics Engineering.
- Modelling, identification and control of a fixed-wing UAV**, *A. Gatti*, M.Sc. in Aeronautics Engineering.
- 2018 **Design and optimization tool for multirotor unmanned aerial vehicles**, *E. Balcioglu*, M.Sc. in Aeronautics Engineering.

- Hardware/software architecture, code generation and control for multirotor UAVs**, *G. Bressan*, M.Sc. in Computer Science and Engineering.
- Multirotor UAVs for fugitive emissions detection: sizing, modelling and control system design**, *M. Maccotta*, M.Sc. in Automation and Control Engineering.
- Air-to-air automatic landing for multirotor UAVs**, *P. Giuri, A. Cossetti*, M.Sc. in Aeronautics Engineering.
- Optimal and robust UAV state estimation based on Gps and optical flow**, *S. Musacchio*, M.Sc. in Aeronautics Engineering.
- 2017 **Guidance and control for a fixed-wing UAV**, *S. Farì*, M.Sc. in Automation and Control Engineering.
- Ground effect compensation for multicopter UAV**, *R. Salbati*, exchange student from the Université de Liège (ULg), M.Sc. in Aeronautics Engineering.
- Design, identification and control of a micro aerial vehicle**, *D. Chevallard*, M.Sc. in Aeronautics Engineering.
- Consensus based control for a unmanned aerial vehicle formation**, *A. Delbono*, M.Sc. in Computer Science and Engineering.
- Nonlinear attitude and position control for a quadrotor UAV**, *D. Carelli*, M.Sc. in Automation and Control Engineering.
- Nonlinear control of a tilt-arm quadrotor UAV**, *P. Gattazzo*, M.Sc. in Automation and Control Engineering.
- 2016 **Data-driven attitude control design for multirotor UAVs**, *T. Chupin*, M.Sc. in Automation and Control Engineering.
- Adaptive control of multirotor UAVs**, *A. Russo*, M.Sc. in Automation and Control Engineering.
- Software architecture, estimators and control for multirotor UAVs**, *A. De Angelis, A. Sorbelli*, M.Sc. in Computer Science and Engineering.
- Ground effect analysis for a quadrotor platform**, *D. Del Cont Bernard*, M.Sc. in Aeronautics Engineering.
- Distance control from vertical surfaces of a multirotor UAV designed for Structural Health Monitoring of civil infrastructures**, *D. Di Bacco*, M.Sc. in Aeronautics Engineering.
- Design, identification and control of a tiltrotor quadcopter UAV**, *C. Micheli*, M.Sc. in Automation and Control Engineering.
- Identificazione e controllo della dinamica verticale di un elicottero quadrirotore**, *M. Ferronato*, M.Sc. in Automation and Control Engineering.