

Dario Calogero Guastella

Curriculum Vitae

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Dec. 2018 – **Postdoctoral Research Fellow**, *Department of Electrical, Electronics, and Computer Engineering*, University of Catania, Italy, Research project title: *Control of mobile robots in unstructured environments*.
Advisor: Prof. Ing. Giovanni Muscato

Education

- 2015 – 2018 **PhD in Systems, Energy, Computer and Telecommunication Engineering (Robotics curriculum)**, *Department of Electrical, Electronics, and Computer Engineering, University of Catania, Italy*, graduation date: January 7th, 2019, PhD thesis title: *Ground Vehicle Navigation through Traversability Analysis of Outdoor Environments*.
- 2013 – 2015 **Master degree in Automation Engineering and Control of Complex Systems**, *University of Catania, Italy*, graduation date: July 23rd, 2015, final grades: 110/110 cum laude.
- 2010 – 2013 **Bachelor degree in Electronic Engineering**, *University of Catania, Italy*, graduation date: November 25th, 2013, final grades: 110/110 cum laude.

Experience

Teaching

- Feb. 2021 – **Co-lecturer**, Robotics (*Master degree in Automation Engineering and Control of Complex Systems*), Department of Electrical, Electronics, and Computer Engineering, University of Catania, Italy.
- 2019 – **Exam committee member**, Robotics (*Master degree in Automation Engineering and Control of Complex Systems*) and Automatic Control (*Bachelor degree in Electronic Engineering*), Department of Electrical, Electronics, and Computer Engineering, University of Catania, Italy.
- 2015 – 2021 **Teaching assistant**, Robotics course (*Master degree in Automation Engineering and Control of Complex Systems*), University of Catania, Italy.
Lab assistant - Teacher for introductory lectures on ROS

Research

- Aug. 17th – 21st, 2020 **Summer school attendee**, *Course on Deep Learning and Computer Vision for Autonomous Systems*, Aristotle University of Thessaloniki, Greece (virtual).

2017 – 2020 **Participation in the MBZIRC**, *Mohamed Bin Zayed International Robotics Challenge*, organized by Khalifa University, Abu Dhabi, UAE. **Video: 2017 - 2020.**

Apr. – July 2017 **Visiting researcher**, *Research project: 3D Reconstruction and Virtual Reality in Mobile Robot Teleoperation*, University of Hertfordshire, Hatfield, UK.
Supervisor: Dr. Salvatore Livatino

Aug. 15th – 27th, 2016 **ROS Summer school attendee**, *Course on the Robot Operating System and workshop on UAVs*, FH Aachen University of Applied Sciences, Aachen, Germany.

June 20th – 25th, 2016 **Summer school attendee**, *Course on Search and Rescue and Field Robotics*, organized in the framework of the FP7 EU Project “Sherpa”, Passo Pordoi, Italy.

Professional

Nov. 2014 – **Internship**, *STMicroelectronics*, Catania, Italy.

July 2015 Microcontroller programming and conditioning electronics design.

Publications

1. D C Guastella, L Cantelli, C D Melita, and G Muscato. **A Global Path Planning Strategy for a UGV from Aerial Elevation Maps for Disaster Response**. In *ICAART (1)*, 2017
2. L Cantelli, D C Guastella, C D Melita, G Muscato, S Battiato, F D’Urso, G M Farinella, A Ortis, and C Santoro. **Autonomous landing of a UAV on a moving vehicle for the MBZIRC**. In *Human-centric Robotics - Proceedings of the 20th International Conference Clawar 2017*. World Scientific, 2017
3. L Cantelli, D C Guastella, C D Melita, and G Muscato. **UGV navigation in unstructured environments through UAV survey**. In *Human-centric Robotics - Proceedings of the 20th International Conference Clawar 2017*. World Scientific, 2017
4. S Battiato, L Cantelli, F D’Urso, G M Farinella, L Guarnera, D Guastella, C D Melita, G Muscato, A Ortis, F Ragusa, and C Santoro. **A System for Autonomous Landing of a UAV on a Moving Vehicle**. In *Image Analysis and Processing - ICIAP 2017*. Springer International Publishing, 2017
5. D C Guastella, N D Cavallaro, C D Melita, M Savasta, and G Muscato. **3D path planning for UAV swarm missions**. In *Proceedings of the 2018 2nd International Conference on Mechatronics Systems and Control Engineering*. ACM, 2018
6. L Cantelli, D C Guastella, L Mangiameli, C D Melita, and G Muscato. **A walking assistant using brakes and low cost sensors**. In *Proceedings of the 20th International Conference Clawar 2018*, 2018
7. L Cantelli, D C Guastella, D Longo, C D Melita, and G Muscato. **Coverage path planning by swarm of UAVs for UGV traversability analysis**. In *Proceedings of the 21st International Symposium on Measurement and Control in Robotics (ISMCR '18)*, 2018
8. D C Guastella, L Cantelli, D Longo, C D Melita, and G Muscato. **Coverage path planning for a flock of aerial vehicles to support autonomous rovers through traversability analysis**. *ACTA IMEKO*, 8(4):9–12, 2019
9. D C Guastella, L Cantelli, G Giammello, C D Melita, G Spatino, and G Muscato. **Complete coverage path planning for aerial vehicle flocks deployed in outdoor environments**. *Computers & Electrical Engineering*, 75:189–201, 2019
10. F. D’urso, F. Messina, G. Pappalardo, C. Santoro, L. Cantelli, D. Guastella, C.D. Melita, and G. Muscato. **Aerial monitoring of the territory through the use of UAV swarms [Monitoraggio aereo del territorio tramite l’uso di sciame di UAV]**. *Bollettino di Geofisica Teorica ed Applicata*, 60:166–175, 2019

11. C.D. Melita, D.C. Guastella, L. Cantelli, G. Di Marco, I. Minio, and G. Muscato. **Low-altitude terrain-following flight planning for multirotors**. *Drones*, 4(2):1–21, 2020
12. S. Palazzo, D. C. Guastella, L. Cantelli, P. Spadaro, F. Rundo, G. Muscato, D. Giordano, and C. Spampinato. **Domain Adaptation for Outdoor Robot Traversability Estimation from RGB data with Safety-Preserving Loss**. In *2020 IEEE International Conference on Intelligent Robots and Systems*, 2020
13. G. Sutura, D. C. Guastella, and G. Muscato. **A Novel Design of a Lightweight Magnetic Plate for a Delivery Drone**. In *2020 23rd International Symposium on Measurement and Control in Robotics (ISMCR)*, pages 1–4, 2020
14. G. Sutura, A. Borgese, D. C. Guastella, L. Cantelli, and G. Muscato. **A Multi-Robot System for Thermal Vision Inspection**. In *2020 23rd International Symposium on Measurement and Control in Robotics (ISMCR)*, pages 1–6, 2020
15. D.C. Guastella and G. Muscato. **Learning-based methods of perception and navigation for ground vehicles in unstructured environments: A review**. *Sensors (Switzerland)*, 21(1):1–22, 2021

Awards

- 2020 Best Paper and Presentation Award at *Automatica.it 2020* national conference, for the contribution entitled “Autonomous Vision-Based Aerial Navigation and Environment Interaction with Multi-Rotors”
- 2018 Best Paper Award *Industrial Robot - Emerald Publishing* for the paper entitled “A walking assistant using brakes and low cost sensors”.

Programming skills

- Languages C, C++, Python
- Frameworks Robot Operating System (ROS), Gazebo simulator, Matlab and Simulink

Last updated on May 3rd, 2021