Simone D'Angelo

Post-Doctorate Research Fellow

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SKETCH BIO

Simone D'Angelo was born in Caserta, Italy, in July 1996. He received his Bachelor's and Master's degrees in Automation Engineering from the University of Naples "Federico II" in 2018 and 2021, and his Ph.D. in robotics and autonomous systems (ITEE) in 2025. He is currently a postdoctoral researcher at the PRISMA Laboratory of the same university. In 2024, during his Ph.D., he was visiting researcher with Toronto Metropolitan University (TMU) and Techincal University of Denmark (DTU). Within his research group, he is also involved in different industrial and EU-funded research projects focused on several topics, such as the use of unmanned aerial vehicles for inspection and maintenance.

CURRENT POSITION

Postdoctoral researcher in aerial robotics at PRISMA Laboratory.

Main activities: Developer of autonomous and semi-autonomous solutions to complete inspection and contact-based tasks (Non-destructive Tests) with tilting Unmanned Aerial Manipulators in structured environments.

WORK EXPERIENCE

Jan 2025 Current	**Post-Doctorate Research Assistant** at PRISMA Laboratory, University of Naples Federico II, Naples (Italy) Researcher and developer in Robotics. **Topics**: Study and develop solutions to automate process production in aviation through robotic and artificial intelligence solutions. **Advisor:** Prof. Vincenzo Lippiello
Nov 2024 Jan 2025	**Research Assistant** at PRISMA Laboratory, Department of Information Technology and Electrical Engineering, Naples (Italy) Researcher and developer in Robotics. **Topics**: Study of autonomous navigation solutions in the ROS2 environment; CESMA scholarship. **Advisor:** Prof. Vincenzo Lippiello
Apr 2024 Aug 2024	**Visiting Researcher** at Department of Electrical and Photonics Engineering Automation and Control, Copenhagen (Denmark) Researcher and developer in Robotics. **Topics**: Aerial manipulator design and motion/interaction control algorithms development. **Advisor:** Prof. Matteo Fumagalli
Jan 2024 March 2024	**Visiting Researcher** at Autonomous Vehicles Laboratory (AVL), Toronto Metropolitan University (TMU), Toronto (Ontario) Researcher and developer in Robotics. **Topics**: Unmanned Aerial Vehicle control algorithms development for online trajectory re-planning and online obstacle avoidance. **Advisor:** Prof. Reza Faieghi

Sept 2021 March 2021	**Trainee** at PRISMA Laboratory, Department of Information Technology and Electrical Engineering, Naples (Italy) Researcher and developer in Robotics. **Topics**: Aerial manipulator control algorithms development for infrastructure inspection and environment interaction. **Advisor:** Prof. Fabio Ruggiero

EDUCATION

Nov 2021 Oct 2024	**Ph.D. Degree in Aerial Robotics** at Università degli Studi di Napoli "Federico II", Department of Information Technology and Electrical Engineering **Topics**: Semi-autonomous interaction control of robotic systems. **Advisor:** Prof. Bruno Siciliano. **Co-Advisor:** Prof. Fabio Ruggiero
Apr 2021 June 2021	**24 CFUs for teaching qualification in conformity with decree 616/17** at Pegaso Online Telematic University **Topics**: Training pathway for the acquisition of 24 CFUs in anthropo-psycho-pedagogical disciplines and teaching methodologies and technologies
Sept 2018 March 2021	**M.Sc. in Automation Engineering (cum laude)** at Università degli Studi di Napoli "Federico II", Department of Information Technology and Electrical Engineering **Dissertation:** *Development of algorithms for the stabilization and control of a hyper-redundant aerial manipulator for refinery inspections* **Advisor:** Prof. Fabio Ruggiero
Sept 2015 Oct 2018	**B.Sc. in Automation Engineering** at Università degli Studi di Napoli "Federico II", Department of Information Technology and Electrical Engineering **Dissertation:** *Development of a control algorithm for a DC motor on micro STM32.* **Advisor:** Prof. Gianmaria De Tommasi

SKILLS

Programming Languages	C/C++, Python, Latex.
Scripting Languages	MATLAB.
Operating System	GNU/Linux, Windows, IOS.
Development Environment	Simulink, ROS, ROS2, Boost, CMake.
Embedded Hardware Platforms	Mbed, Pixhawk.
Main competencies	Intelligent Systems, Robotics, Aerial Robotics, Manipulation, Linear Control, Non-linear Control, Interaction Control, Optimization Techniques, Trajectory & Path Planning, Navigation, Mechatronics, Embedded Programming.
Other	Docker, Git.
Communication and interpersonal skills	Problem Solving, Team Working, Adaptability, Autonomy.

SPOKEN LANGUAGES

- **Italian**: Mother tongue.
- **English**: Fluency.

ADDITIONAL INFORMATION

- **Driving Licence**: B.
- **EU Drone License**: A1/A3.

TEACHING EXPERIENCES

- **Tutor** of the course Field and Service Robotics, spring semester: University of Naples "Federico II". Master's Course in Automation Engineering (Second year, second semester)
- **Tutor** of the course Robotics, autumn semester: University of Naples "Federico II". 3rd SEAS 4.0 intake 2023/24 Sustainable Ship And Shipping, Erasmus Mundus Joint Master Degree
- **Tutor** of the course Robotics, autumn semester: University of Naples "Federico II". 4th SEAS 4.0 intake 2024/25 Sustainable Ship And Shipping, Erasmus Mundus Joint Master Degree

SCIENTIFIC PUBLICATIONS (INT'L JOURNALS)

- **Stabilization and Control on a Pipe-Rack of a Wheeled Mobile Manipulator with a Snake-like Arm**
  Simone D'Angelo*, Antonio Corrado, Fabio Ruggiero, Jonathan Cacace, Vincenzo Lippiello
  Robotics and Autonomous Systems - (RAS), doi: https://doi.org/10.1016/j.robot.2023.104554
- **Semi-autonomous Unmanned Aerial Manipulator Teleoperation for Push–and–Slide Inspection using Parallel Force/Vision Control**
  Simone D'Angelo*, Mario Selvaggio, Vincenzo Lippiello, Fabio Ruggiero
  Robotics and Autonomous Systems - (RAS), doi: https://doi.org/10.1016/j.robot.2024.104912
- **Exponential Control Barrier Function and Model Predictive Control for Jerk- Level Reactive Motion Planning of Quadrotors**
  Zeinab Shayan*, Mohammadreza Izadi, Vincenzo Scognamiglio, **Simone D'Angelo**, Shashank Singoji, Vincenzo Lippiello, Reza Faieghi
  Control Engineering Practice - (CEP) - doi: https://doi.org/10.1016/j.conengprac.2025.106489
- **AEROBULL: A Center-of-Mass Displacing Aerial Vehicle Enabling Efficient High-Force Interaction**
  Tong Hui*, Stefan Rucareanu*, Esteban Zamora*, **Simone D'Angelo***, Haotian Liu, Matteo Fumagalli
  Robotics and Autonomous Systems - (RAS) - doi: https://doi.org/10.1016/j.robot.2025.105127
- **A Semi-Autonomous Aerial Platform Enhancing Non-Destructive Tests**
  Simone D'Angelo*, Salvatore Marcellini, Alessandro De Crescenzo, Michele Marolla, Vincenzo Lippiello, Bruno Siciliano
  Multidisciplinary Digital Publishing Institute (MDPI) Drones - doi: https://doi.org/10.3390/drones9080516
- **H-CoRE: A Cooperative Framework for Heterogeneous Multi-Robot Exploration and Inspection**
  Simone D'Angelo*, Francesca Pagano, Riccardo Caccavale, Vincenzo Scognamiglio, Alessandro De Crescenzo, Pasquale Merone, Stefano Ciaravino, Alberto Finzi, and Vincenzo Lippiello
  Multidisciplinary Digital Publishing Institute (MDPI) Drones - **Under Review**

SCIENTIFIC PUBLICATIONS (INT'L CONFERENCES)

- **Development of a Control Framework to Autonomously Install Clip Bird Diverters on High-Voltage Lines**
  Simone D'Angelo*, Francesca Pagano*, Fabio Ruggiero, Vincenzo Lippiello
  2023 International Conference on Unmanned Aircraft Systems - (ICUAS), Warsaw, Poland, 2023, pp. 1089-1096, doi: 10.1109/ICUAS57906.2023.10156403

- **Development of a Semi-Autonomous Framework for NDT Inspection with a Tilting Aerial Platform**
  Salvatore Marcellini*, **Simone D'Angelo**, Alessandro De Crescenzo, Michele Marolla, Vincenzo Lippiello, and Bruno Siciliano
  Ang Jr, M.H., Khatib, O. (eds) Experimental Robotics. ISER 2023. Springer Proceedings in Advanced Robotics, vol 30. Springer, Cham. doi: https://doi.org/10.1007/978-3-031-63596-0_31

- **Horizontal Sustained Force Delivery with an Aerial Manipulator using Hybrid Force/Position Control**
  Hameed Ullah*, **Simone D'Angelo**, Fabio Ruggiero, Vincenzo Lippiello, Santos Miguel Orozco Soto
  2024 25th International Carpathian Control Conference - (ICCC), Krynica Zdrój, Poland, 2024, pp. 1-5, doi: 10.1109/ICCC62069.2024.10569948

- **Efficient Development of Model-Based Controllers in PX4 Firmware: A Template-Based Customization Approach**
  Simone D'Angelo*, Francesca Pagano*, Francesco Longobardi, Fabio Ruggiero, Vincenzo Lippiello
  International Conference on Unmanned Aircraft Systems - (ICUAS), Chania - Crete, Greece, 2024, pp. 1155-1162, doi: 10.1109/ICUAS60882.2024.10556938

- **Drone-Based Solutions for Asset Integrity: Development of NDT Drone and 3D FPV Payload for Asset Remote Testing and Inspection**
  R. Campaci*, **S. D'Angelo***, T. Borzone, L. Madia, M. Favaretto, V. Lippiello, A. Vignali
  International Petroleum Technology Conference 2025 - (IPTC) - doi: https://doi.org/10.2523/IPTC-24802-MS

LAST UPDATE

July 2025.