Alberto Dionigi

Curriculum Vitae

Education

November 2020 - April 2024	**PhD in Industrial and Information Engineering**, *The University of Perugia*, Department of Electrical and Information Engineering, Perugia, Italy. Mark: Excellent.
July 2020	**Professional Qualification as Information Engineer**, *The University of Perugia*, Department of Electrical and Information Engineering, Perugia, Italy. Mark: 60/60.
October 2017 - June 2020	**Masters Degree in Computer and Robotics Engineering**, *The University of Perugia*, Department of Electrical and Information Engineering, Perugia, Italy. Mark: 110/110 *cum laude*.
October 2014 - February 2018	**Bachelor Degree in Computer and Electronic Engineering**, *The University of Perugia*, Department of Electrical and Information Engineering, Perugia, Italy. Mark: 110/110 *cum laude*.

Experience

December 2023 - Present	**Research Fellow**, DEPARTMENT OF ENGINEERING, Perugia, Italy. ○ Type of employment: Researcher. ○ Main activities and responsibilities: Research activities on the development of innovative solutions for autonomous navigation of robotic platforms through model-based and data-driven approaches.
January 2023 - October 2023	**Visiting Scholar**, NYU TANDON SCHOOL OF ENGINEERING, New York, USA. ○ Type of employment: Visiting Scholar. ○ Main activities and responsibilities: Research activities on the intersection of robotics and reinforcement learning for autonomous navigation of vision-based aerial robots.
November 2020 - November 2023	**Research Assistant**, DEPARTMENT OF ENGINEERING, Perugia, Italy. ○ Type of employment: Research Assistant. ○ Main activities and responsibilities: Research activities on Robotics, Computer Vision and Machine Learning. Support in teaching activities.

September 2020 - November 2020 · **Post-degree Research Fellow**, Department of Engineering, Perugia, Italy.
- Type of employment: Research fellow in the project: Applications of Machine Learning techniques to Precision Agriculture.
- Main activities and responsibilities: Research activities on Robotics, Computer Vision and Machine Learning for agricultural applications.

June 2020 - Present · **Co-Founder at RedLynx Robotics s.r.l.**, Red Lynx Robotics s.r.l., Via Mario Donati Guerrieri 16, 06132, Perugia, Italy.
- Type of employment: Co-Founder.
- Main activities and responsibilities: Management and supervision of Machine Learning projects. Development of algorithms for mobile robots.

February 2018 - Present · **Co-Supervisor of Bachelor's Degree Thesis**, Department of Engineering, Perugia, Italy.
- Type of employment: Co-Supervisor.
- Main activities and responsibilities: Support and supervision of thesis activities.

Reviewer for Conferences and Journals

November 2020 - Present · **Reviewer for the following conferences**, IEEE International Conference on Robotics and Automation (ICRA), IEEE International Conference on Intelligent Robots and Systems (IROS), IEEE Conference on Decision and Control (CDC).

Reviewer for the following journals, IEEE Robotics and Automation Letters, IEEE Transactions on Robotics, IEEE Transactions on Control Systems Technology, IEEE Transactions on Automation Science and Engineering, ELSEVIER Measurement.

Conference Chair

December 2023 - Present · **Chair and Co-chair of the following conferences**, IEEE International Conference on Advanced Robotics (ICAR), IEEE International Conference on Intelligent Robots and Systems (IROS).

Awards

5 August 2022 · **Virtual Challenge on Multi-Robot Inspection and Monitoring**, Czech Technical University (CTU), Prague, Czech Republic.

28 September 2020 · **Pegaso 2000 award for the best theses in computer engineering**, Pegaso 2000 s.r.l., Perugia, Italy.

Affiliations

February 2022 - Present · **IEEE Robotics and Automation Society Membership**, *Graduate Student Member*.

Journal Publications

2024 **D-VAT: End-to-End Visual Active Tracking for Micro Aerial Vehicles**, *Alberto Dionigi, Simone Felicioni, Mirko Leomanni and Gabriele Costante*, IEEE Robotics and Automation Letters (RA-L), 2024.

2024 **Quadrotor Control System Design for Robust Monocular Visual Tracking**, *Mirko Leomanni, Francesco Ferrante, Alberto Dionigi, Gabriele Costante, Paolo Valigi, and Mario L. Fravolini*, IEEE Transactions on Control Systems Technology (TCST), 2024.

2023 **ARD-VO: Agricultural Robot Dataset of Vineyards and Olive groves**, *Francesco Crocetti, Enrico Bellocchio, Alberto Dionigi, Simone Felicioni, Gabriele Costante, Mario Luca Fravolini, Paolo Valigi*, Journal of Field Robotics (JFR), 2023.

2023 **A benchmark analysis of data-driven and geometric approaches for robot ego-motion estimation**, *Marco Legittimo, Simone Felicioni, Fabio Bagni, Andrea Tagliavini, Alberto Dionigi, Francesco Gatti, Micaela Verucchi, Gabriele Costante, Marko Bertogna*, Journal of Field Robotics (JFR), 2023.

2023 **A Convex Programming Approach to Multipoint Optimal Motion Planning for Unicycle Robots**, *Mirko Leomanni, Giuseppe Mollica, Alberto Dionigi, Paolo Valigi, Gabriele Costante*, IEEE Control Systems Letters (L-CSS), 2023.

2023 **Integrating Sparse Learning-Based Feature Detectors into Simultaneous Localization and Mapping — A Benchmark Study**, *Giuseppe Mollica, Marco Legittimo, Alberto Dionigi, Gabriele Costante, Paolo Valigi*, Sensors (MDPI), 2023.

2022 **E-VAT: an Asymmetric End-to-End Approach to Visual Active Exploration and Tracking**, *Alberto Dionigi, Alessandro Devo, Leonardo Guiducci and Gabriele Costante*, IEEE Robotics and Automation Letters (RA-L), International Conference on Robotics and Automation (ICRA), 2022.

2021 **Enhancing continuous control of mobile robots for end-to-end visual active tracking**, *Alessandro Devo, Alberto Dionigi, and Gabriele Costante*, Robotics and Autonomous Systems (RAS), 2021.

Conference Publications

2024 **The Power of Input: Benchmarking Zero-Shot Sim-to-Real Transfer of Reinforcement Learning Control Policies for Quadrotor Control**, *Alberto Dionigi, Gabriele Costante and Giuseppe Loianno*, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024.

2024 **Infrastructure-less UWB-based Active Relative Localization**, *Valerio Brunacci, Alberto Dionigi, Alessio De Angelis and Gabriele Costante*, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024.

2024 **Almost Global Trajectory Tracking for Quadrotors Using Thrust Direction Control on $\mathcal{S}^2$**, *Mirko Leomanni, Alberto Dionigi, Francesco Ferrante, Paolo Valigi and Gabriele Costante*, 63rd IEEE Conference on Decision and Control (CDC), 2024.

2023 **Exploring Deep Reinforcement Learning for Robust Target Tracking Using Micro Aerial Vehicles**, *Alberto Dionigi, Mirko Leomanni, Alessandro Saviolo, Giuseppe Loianno and Gabriele Costante*, IEEE 21st International Conference on Advanced Robotics (ICAR), 2023.

Summer School

01-05 August 2022 **IEEE RAS Summer School on Multi-Robot Systems**, Czech Technical University (CTU), Prague, Czech Republic.

04-11 September 2024 **DRIMS - Doctoral Summer School on Robotics and Intelligent Machines**, Sant'Anna University of Pisa, Volterra, Italy.

Computer Skills

Intermediate Android, MacOS, Tensorflow

Advanced Python, Java, C++, Robot Operating System (ROS), PyTorch, Matlab, JavaScript, HTML5, CSS, Servlet Java, MySQL, LaTeX, Linux, Microsoft Windows, Office Suite

Languages

Italian **Mothertongue**

English **Advanced** *Fluent in speaking. Good in listening, reading and writing*

French **Basic** *Basic words and phrases only*