Giovanni Donati

PhD student at University of Pisa

Graduated with honors in Mechanical Engineering with particularly developed skills in the field of automation and industrial robotics.

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EDUCATION

Ph.D. Smart Industry
University of Pisa
2021 - Present   *PhD scholarship winner*

Master Degree in Mechanical Engineering
LM-33 curriculum Robotics
University of Florence
2019 - 2021
Final grade: 110/110 cum laude

Thesis title:
- Design and testing of visual servoing algorithms for underwater manipulators | Tutors: Prof.Benedetto Allotta, Prof. Alessandro Ridolfi

Bachelor Degree in Mechanical Engineering
L-9
University of Florence
2015 - 2018
Thesis title:
- Modeling and performance analysis of a three-shaft aircraft engine through a modular code | Tutor: Prof. Bruno Facchini

Internships

Compressor Research and Development Department
Baker Hughes Company, Florence, Italy
Sept .2022 – Sept .2023

MDM LAB – Mechatronics Laboratory
Università degli studi di Firenze
May 2021 – Sept. 2021

Published Papers

Donati G., Basso M., Manduzio G. A. Mugnaini M. Pecorella T., Camerota C., "A Convolutional Neural Network for Electrical Fault Recognition in Active Magnetic Bearing Systems," Sensors, vol. 23(16), 7023, 2023.

G. Donati M. Basso and M. Mugnaini, "Smart Fault Dictionary for Active Magnetic Bearings Systems," 2023 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4.0& IoT). Brescia, Italy, 2023.

M. Basso, G. Donati and M. Mugnaini, "A simulation tool for sensor selection in AMB rotor supported systems," 2023 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Kuala Lumpur, Malaysia, 2023.

Submitted Papers

G. Donati M. Basso and M. Mugnaini, "Automatic Tuning of Augmented PIDs for Active Magnetic Bearings supporting Turbomachinery," IEEE Transactions on Mechatronics.

G. Donati M. Basso and M. Mugnaini, "Simultaneous Rotor and Controller Tuning for Active Magnetic Bearings in Turbomachinery," 2024 International Conference on Control, Automation and Diagnosis (ICCAD), Paris, France 2024.

G. Donati M. Basso and M. Mugnaini C. Camerota, "A Convolutional Neural Network to Locate Unbalance in Turbomachinery Supported by AMBs," 2023 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4.0& IoT). Firenze, Italy, 2024.

Giovanni Donati, Massimiliano Ortiz Neri, Michele Basso, Marco Mugnaini, Jerzy T. Sawicki, "Low-Order MIMO Controller for Turbomachinery Supported by Active Magnetic Bearings," Mechanical Systems and Signal Processing.

Giovanni Donati, Massimiliano Ortiz Neri, Michele Basso, Marco Mugnaini, Jerzy T. Sawicki, "Robust Controller Development via Iterative Model Updating for Active Magnetic Bearing Rotor Systems," Journal of Dynamic Systems, Measurements, and Control.

University Projects

- CFD analysis of the evaporation of a single isolated droplet of kerosene (2021)
- Fault-injection analysis for a brake by wire system (2020)
- DFM analysis of a chopper (2019)
- Design of a wall-mounted crane for industrial applications (2018)

DIGITAL SKILLS

Application Software
Data Analysis: MATLAB | CAD: SolidWorks, SpaceClaim Engineer | Software CAE: AnSYS FLUENT - CFD, HyperMesh, LTspice, MATLAB Partial Differential Equation Toolbox, Robot Operating System (ROS), MatlabSimulink |Operating systems: Linux | Microsoft Windows

Programming
Integrated development environment (IDE): PyCharm, Visual Studio, STMicroelectronics STM32cube | Programming languages: C, Python

Graphics and multimedia
Graphic Editors: Adobe Photoshop

Office automation
Text Elaboration: Microsoft Word | Spreadsheet: Microsoft Excel | Presentation Software: Microsoft PowerPoint | Office Suite: Microsoft Office

CERTIFICATIONS

English C1 Linguistic Center of University of Florence | English C1, Linguistic Center of University of Pisa

LANGUAGES

ITALIAN
Native Proficiency
ENGLISH
Professional Working Proficiency

RESEARCH INTERESTS

- Advanced control and fault diagnosis of magnetic bearings in high-speed rotating machinery;

- Visual servoing of robotic systems.