Marco Falotico

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Education

• Program: Automation Engineering

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Bologna 2021-2024

- Final Grade: 110/110 cum laude - Graduation Date: 18/03/2024 - Weighted Average Grade at Admission: 29.26/30 - Admission Grade Point Average: 107.29/110 • Thesis: Modeling and Modal Control for Adaptive Optics of Ground-Based Telescopes - Supervisor: Prof. Giuseppe Notarstefano - Keywords: Adaptive Optics, Deformable Mirrors, Ground-Based Telescopes, Modal Control BACHELOR'S DEGREE, Politecnico di Bari • Program: Computer and Automation Engineering (Automation Track)

- Final Grade: 110/110 cum laude

MASTER'S DEGREE, Alma Mater Studiorum, University of Bologna

- Graduation Date: 13/10/2021
- Thesis: Synthesis of Fractional Crone Control Algorithms of Second and Third Generation, and Set-Point Filters with ZV Shaper
 - Supervisor: Prof. Paolo Lino
 - Keywords: Robust Control, Fractional Control, Set-Point Filters

HIGH SCHOOL DIPLOMA, Liceo Arcangelo Scacchi

Final Grade: 100/100 cum laude

Work Experience

PhD in Biomedical, Electrical and System Engineering, University of Bologna Bologna 11/2024 – Present

- Methods and toolboxes for learning, optimization and control for MORFEO, the Adaptive Optics module of the ELT telescope
 - Implementation of state-of-art modeling and control techniques for Adaptive Optics
 - Formulation of Optimal Control laws for MCAO systems

Research Fellow, University of Bologna

- Development of estimation, optimization, and control algorithms for MORFEO, the Adaptive Optics module of the ELT telescope
 - Review of state-of-the-art methods and software tools for optimization, estimation, and control
 - Development of optimization and control methods for MORFEO
 - Creation of numerical simulations for modeling and control of Adaptive Optics systems

Internship, University of Bologna

- Research on modeling and control techniques for deformable mirrors in adaptive optics
- Main activities:
 - Study of the design and control system for the MORFEO adaptive optics module
 - Literature review on multi-mirror system modeling techniques
 - Development of a possible model for the MORFEO adaptive optics module
- Algorithms produced for deformable mirror model generation
- Duration: 90 hours

Bari 2018-2021

Bari 2018

Bologna 05/2024 - 10/2024

Bologna 11/2023 – 12/2023

School-Work Alternation Project, Liceo Arcangelo Scacchi, Bari

- EEE (Extreme Energy Events) project on cosmic ray research
- Use of MRPC (Multigap Resistive Plate Chambers) detectors to observe primary cosmic rays
- Visit to CERN laboratories
- Participation in the eighth conference of the Centro Fermi (Centro di Cultura Scientifica "Ettore Majorana", Erice, 2017)

Computer Skills

• Programming Languages:

- Python [Intermediate]
- C [Intermediate]
- Matlab [Intermediate]
- Java [Basic]

Languages

• Italian [Native]

• General Skills

- Office Suite: [Intermediate]
- Databases: [Basic]
- Operating Systems: [Intermediate]
- Networking: [Basic]
- English [B2]