

# Luca Maurelli

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🏠 Treviglio (BG), 24047, Italy

## CURRENT POSITION

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**Ph.D. Student** at the **Department of Engineering and Applied Sciences**  
University of Bergamo

Oct 2019 – Present

## PREVIOUS POSITION

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**Research Assistant** at the **Department of Management, Information and Production Engineering**  
University of Bergamo

May 2018 – Sep 2019

- Project SMART4CPPS, funded by Regione Lombardia, led by 4 OdR and 10 local companies.
  - Management activity of Pilot 1 and Pilot 4
  - Pilot 1: Design of a health monitoring system for electromechanical actuators (University of Bergamo, Camozzi)
  - Pilot 4: Machine learning algorithms for the zero-defect end-of-line tuning of medium-voltage switches (University of Bergamo, Cosberg, ABB, CNR)
- Project CRYOABLATION:
  - Model identification of the temperature dynamics in *cryoblation* for atrial fibrillation therapy (Dipartimento di Cardiologia, Ospedale di Seriate)
- Project SP@RK-4.0-I.E.S.:
  - Data analysis and development of a health monitoring and predictive maintenance system in high performance workcenters (Mandelli spa)
- Project SMI-PREDICTIVE MAINTENANCE:
  - Design of a predictive maintenance system for beverage packaging machines using accelerometers (SMI Group)

**Software Engineer** at Consortium Intellimech  
**Kilometro Rosso**

Oct 2017 – Apr 2018

- Project KNOWLEDGIZE, funded by Regione Lombardia, led by Consortium Intellimech, with 2 OdR and 3 local companies.
  - Development of a Knowledge Management Web Platform with an Innovative ML Algorithm based on Tag Searching using Django and Google Services (University of Bergamo, University of Brescia, Cosberg, Elettrocablaggi, Vin Service)
- Development of software applications:
  - Push-bottom panel for testing procedures on PLC in C#
  - Monitoring system using industrial communicating protocols MQTT, MTCONNECT, UPC-UA and MODbus in Python

## EDUCATION

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*Master's degree cum laude in Computer Science*  
University of Bergamo, Italy

110L/100  
Mar 2018

*Development of a Knowledge Management Web Platform with an Innovative ML Algorithm based on Tag Searching*

*Bachelor's degree in Computer Science*  
University of Bergamo, Italy

105/100  
Sep 2015

*Development of a library for Mobile Robot Trajectory Control*

## POST-GRADUATE EDUCATION

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### Ph.D. Courses in:

- *Nonlinear System Identification*  
**Proff. Luigi Piroddi, Simone Formentin, Simone Garatti, Lorenzo Fagiano and others**  
Politecnico of Milan, Italy 48h, Jan 2019
- *Model based Fault Diagnosis using a MATLAB Linear Framework*  
**Proff. Andreas Varga and Daniel Ossmann**  
University of Padova, Italy 48h, Mar 2019
- *Optimization Models and Algorithms*  
**Prof. Maria Teresa Vespucci**  
University of Bergamo, Italy 24h, Jul 2019
- *Advanced Mathematical Methods for Engineering*  
**Proff. Marco Pedroni and Andrea Raimondo**  
University of Bergamo, Italy 24h, Oct 2019
- *Advanced Numerical Methods for Engineering*  
**Prof. Christian Vergara**  
University of Bergamo, Italy 20h, Nov 2019
- *Noise and Vibration Control Engineering*  
**Prof. Nicolaas B. Roozen**  
University of Brescia, Italy 15h, Nov 2019
- *Statistical Signal Processing in Engineering*  
**Prof. Umberto Spagnolini**  
Politecnico of Milan, Italy 26h, Jan 2020
- *Numerical Methods for Optimal Control*  
**Prof. Mario Zanon**  
IMT School for Advanced Studies Lucca, Italy 26h, Jan 2020

### Ph.D. Seminars in:

- *Optimization and control of airborne wind energy systems*  
University of Bergamo, Italy 2h, Jan 2019
- *Identification for Control*  
University of Bergamo, Italy 2h, Mar 2019
- *Optimization Models and Algorithms*  
University of Bergamo, Italy 1h, Jul 2019
- *Fault diagnosis application in industry and mechatronics*  
University of Bergamo, Italy 1h, Oct 2019
- *Kernel-based learning for system identification*  
University of Bergamo, Italy 1h, Oct 2019

## TEACHING EXPERIENCE

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### Lecture Assistant of the following MSc courses at the University of Bergamo:

1. *Controlli Automatici* (Advanced Control Systems) 20h course, Sep 2018 – Dec 2018
2. *Controlli Automatici* (Advanced Control Systems) 12h course, Sep 2019 – Dec 2019
3. *Dynamic Systems Identification* 20h course, Jan 2020 – Jun 2020

### Co-advisor of the following MSc theses at the University of Bergamo:

1. *Sviluppo preliminare di un sistema di health monitoring per un attuatore elettromeccanico*  
Advisor: prof. Fabio Previdi Students: Davide Palazzini, Alen Preda
2. *Data-driven health monitoring di attuatori elettromeccanici per automazione industriale*  
Advisor: prof. Fabio Previdi Students: Davide Presciani, Matteo Gusmini
3. *Simulatore elettro-termo-meccanico di strisce bimetalliche per interruttori industriali a bassa tensione*  
Advisor: prof. Fabio Previdi Student: Paolo Pasinetti
4. *Predizione della vita utile residua di valvole elettropneumatiche usando tecniche di machine learning*  
Advisor: prof. Fabio Previdi Student: Angela Pomata

## PERSONAL INTERESTS

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I have an active lifestyle, playing badminton and lifting weights 5-6 times a week. I run Arch Linux as my operating system at home.