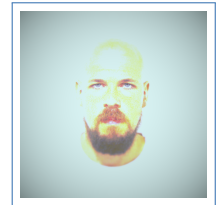# Matteo Tesori

Curriculum vitæ

via Trieste 32a
50065 Pontassieve (FI)
Italy
☐ *+39 328 23 88 480*
✉ *matteo.tesori@unifi.it*
Birth Date: 11/01/1991

Education

2005–2010 **High School Diploma**, *IISS Ernesto Balducci*, Pontassieve,
Final vote - 86/100
Specialized in informatics. Main topics:
○ Assembly
○ C
○ C++
○ Microsoft Access
○ HTML
○ Analog and digital electronics

2010–2017 **Bachelor's degree in Electronics and Telecommunications Engineering**, *University of Florence*, Florence,
Final vote - 104/110 (Average vote: 26.4/30)
Specialized in automation. Main topics:
Engineering
○ Automation and control systems
○ Signal processing
○ Industrial robotics
○ Linear circuits theory
○ Analog and digital electronics
○ Informatics (Assembly, BNF, C)
Mathematics
○ Single variable, multivariable and vectorial calculus
○ Complex analysis
○ Linear algebra
○ Operation research
○ Numerical analysis
○ Probability theory and inferential statistics
Physics
○ Classical and Lagrangian Mechanics
○ Electromagnetic fields

2017–2021	**Master's degree in Electrical and Automation Engineering**, *University of Florence*, Florence, *Final vote* - 110/110 Summa Cum Laude (Average vote: 29.7/30) Specialized in automation. Main topics: **Automation Engineering** ○ Adaptive, predictive and distributed control ○ Robust and non-linear control ○ Estimation and dynamic system identification ○ Mobile robotics ○ Industrial automation **Mathematics** ○ Real analysis ○ Non-linear dynamic systems ○ Optimization methods ○ Machine Learning **Electrical Engineering** ○ Mechatronics ○ Electric machines and power converters ○ Electric power systems

Bachelor's degree thesis

title	*Robust LQ control of an inverted pendulum*
supervisors	Professor Luigi Chisci
description	The main objective of the work was to design, via the theory of Linear Quadratic (LQ) regulator, and simulate, in Simulink, a control system for swinging up and stabilize an inverted pendulum based over an oscillating plan.

Master's degree thesis

title	*Multiple extended object tracking*
supervisors	Professor Luigi Chisci, Professor Giorgio Battistelli, Professor Lin Gao (University of Electronic Science and Technology of China, Chengdu)
description	The main objective of the work was to device a new Probability Hypothesis Density (PHD) filter able to track simultaneously the position and the shape of multiple extended objects. The main contribution of the thesis consists in the definition of a new prediction model, called Lambda:Omicron motion model, that generalizes the well-known unicycle model.

Postgraduate education

2021–2024	**PhD course in Information Engineering (37th cycle)**, *Dipartimento di Ingegneria dell'Informazione (DINFO), University of Florence*, Florence, student with regular scholarship (Final rank: 2nd over 50 attendees).
	PhD program: estimation algorithms for autonomous driving. The main objective is to deliver new and innovative distributed filters for autonomous driving applications, starting from Random Finite Set (RFS) and Machine Learning solutions.

Awards

competition	SSE CHALLENGE - ENGINEERING FOR INDUSTRY 4.0
year	2020
result	1st classified (1500 € prize)
project title	Model predictive control of a differential drive autonomous vehicle.
project description	The main objective of the work was to realize a simple autonomous vehicle capable to follow the path of an arbitrary road by measuring, via two ultrasonic sensors, the distance from the left and right borders of the road.

Computer skills

Basic	HTML, Microsoft Access
Intermediate	C++, C, Python, LabVIEW, Microsoft Office, Inkscape
Advanced	LaTeX, MATLAB, Ableton Live, Vegas Pro

Languages

Italian	Mothertongue
English	Intermediate (B1)