

# Luca Castri

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I pursued my Bachelor's Degree in Engineering in Computer Science and Control Engineering in October 2016 at La Sapienza University of Rome with a thesis about simulation and control of the robot KUKA LWR4+. Then, I continued in the field of automation and I pursued my Master's Degree in Control Engineering in January 2019 always at La Sapienza University of Rome with a thesis about obstacle avoidance for autonomous vehicle, presenting a new control strategy based on optimal control theory and analysing the efficiency and the safety of this control strategy. Currently, I am a PhD student in AI and Robotics at University of Lincoln.

Research interests: causality (causal discovery and reasoning) in robotics.

## *Professional experience*

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<b>July 2021 - ongoing</b>	<b>PhD - AI and Robotics</b> University of Lincoln Major general topics: Causality, Robotics, Human Robot Spatial Interaction (HRSI)
<b>January 2020 - June 2021</b>	<b>Software Specialist at Metapack</b> Major activities: <ul style="list-style-type: none"><li>• Analysis of logic and HMI requirements</li><li>• HMI and PLC development</li><li>• Handling motors and sensors</li><li>• Creation of protocol in order to allow communication between HMI and machine's devices (motor, camera, printer, PLC)</li><li>• Handling data coming from various sensors and cameras</li><li>• Follow test and start-up procedures</li></ul> Main fields: <ul style="list-style-type: none"><li>• Food and beverages</li><li>• Pharmaceutical</li></ul>
<b>April 2019 - December 2019</b>	<b>Test Engineer at Ferrari - Amaris Engineering Consultant</b> Major activities: <ul style="list-style-type: none"><li>• Analysis of logic and HMI requirements, legislative constraints and corner cases</li><li>• Creation of test cases for single ECU validation</li><li>• Support to test engineer for the comprehension and the execution of tests</li><li>• Planning of test cases creation activities in order to meet deadlines related to software releases</li><li>• Collaboration in ECU design process for specification and constraints analysis</li></ul> Major topics: <ul style="list-style-type: none"><li>• ADAS (ACC, Blind Spot Detection, Park Assist System)</li><li>• Event Data Record (AirBag feature)</li><li>• Infotainment</li></ul>

## *Project experiences*

<b>July 2018 - January 2019</b>	<b>Master thesis project - La Sapienza University of Rome</b> Title and abstract of the project: <b>“Autonomous car driving systems: new control strategy”</b> : starting from the dynamical model of the car the scope of the thesis was to build an optimal controller in order to make the car able to avoid other cars in the same scenario. Technical environment and tools: <ul style="list-style-type: none"><li>• MATLAB &amp; Simulink for the car model and the controller implementation</li><li>• VRML for viewer creation</li><li>• LaTeX for the report creation</li></ul>
<b>May 2016 - October 2016</b>	<b>Bachelor thesis project - La Sapienza University of Rome</b> Title and abstract of the project: <b>“Modelling and control of the robot KUKA LWR4+”</b> : the aim of the thesis was to build a position/force parallel controller in order to make the robot able to follow a trajectory and to apply a constant force during the movement on a blackboard. Technical environment and tools: <ul style="list-style-type: none"><li>• MATLAB &amp; Simulink for the robot model and the controller implementation</li><li>• VRML for viewer creation</li><li>• LaTeX for the report creation</li></ul>

## *Education*

<b>October 2016 - January 2019</b>	<b>Master’s Degree - Control Engineering</b> La Sapienza University of Rome Master fully taught in <b>English</b> Major general topics: Robotics, Process Automation, Multivariable systems, Control system <b>Thesis</b> : “Autonomous car driving systems: a new control strategy” <b>Mark</b> : 110/110 with Honors Program
<b>September 2013 - October 2016</b>	<b>Bachelor’s Degree - Computer Science and Control Engineering</b> La Sapienza University of Rome Major general topics: Automation, Telecommunications, Electronics, Systems Theory <b>Thesis</b> : “Modeling and Control of Robot KUKA LWR4 + in Simulink / VRML” <b>Mark</b> : 101/110

## *Languages*

- **Italian**: Mother tongue.
- **English**: Fluently in reading, writing and speaking.

## *Technical skills*

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| <ul style="list-style-type: none"><li>• MATLAB/Simulink</li><li>• Python</li><li>• C and C++</li><li>• ROS</li></ul> | <ul style="list-style-type: none"><li>• Linux, Windows, Mac OS</li><li>• LaTeX</li><li>• SQL</li><li>• Git</li></ul> |
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