

PERSONAL INFORMATION

Andrea Ilgrande



📍 Corso Regina Maria Pia, 73, 00122, Roma, Italia  
 📞 3452276282  
 ✉ [andrea.ilgrande@hotmail.it](mailto:andrea.ilgrande@hotmail.it)

Sex M | Birth date 03/12/1993 | Nationality Italian

QUALIFICATION

Control Systems Engineer

PROFESSIONAL EXPERIENCE

11/2018 - Today

**P.h.d program in Automatic Control, Bioengineering and Operations Research**

I am enrolled as P.h.d candidate at DIAG (“Dipartimento di Automatica, Informatica, Gestionale”) Università La Sapienza di Roma with no scholarship. My research is focusing on the application of control and estimation theory to attitude control problems.

10/2018 - Today

**VEGA-C Real Time Simulator (Sub-contractor)**

I am working on the development of VEGA-C real time simulator for HWIL (Hardware In the loop) and PIL (Processor In the loop) simulations. My activity regards the design/implementation/integration and specification of the software (written in Matlab and Simulink) which models the systems needed to emulate the launcher behaviour during a mission, all in a real time environment. In particular it consists in the integration of dynamic models, and in SW development of communication and avionics models that must be interfaced with OBC by means of 1553 protocol for PIL simulations and also with external platforms emulating the real IRS, TVC and MFU equipments for HWIL. Further I also am the responsible of the post-processing tool needed for proper decommutation and successive engineering analysis of data sent on MIL1553 bus.

EDUCATION

10/ 2015 – 01/2018

**Master of Science in Control Engineering (Laurea Magistrale)**

Master’s degree in Control Engineering achieved with final grade 110/110 cum Laude, at Università Sapienza di Roma, (Course fully taught in English).

- **University Internship at Thales Alenia Space Italia**

Thesis title: “Analysis of Identification Methods For Satellite Parameters Estimation”.  
 The objective of the thesis has been the study and implementation of identification algorithms to estimate satellite parameters from measurements (telemetry data). In particular the focus was in the attitude control subsystem, with the purpose of identifying the variation of the Inertia Tensor. This to update the current knowledge of its value during the spacecraft lifetime with the goal of updating/optimizing the control law. Many simulations have been done in Simulink/Matlab environment to verify the capabilities of the proposed identification algorithms. Further those algorithms have been tested on real telemetry data to test their performance in real case scenarios.

The main topics faced during the master are: Nonlinear Systems and Control, System Identification, Optimal Control, Multivariable and Robust Control, Digital Control, Robotics (manipulators and mobile), Spacecraft Control, Control of electrical drives, Control of vehicle systems.

**University projects:**

- “Gyroscopic stabilization of a motorbike: design, modelling and control”
- “Time optimal trajectories for Dubins car”
- “Fixed Final Time Optimal Control for an Extended SIR model”
- “Speed observer for an Electrical rotatory machine”
- “Control, Planning and Obstacles detection for a mobile robot”
- “Simulation of hydroelectric power plant control through PLC”

10/ 2012– 10/ 2015

**Bachelor’s degree in Computer Science Engineering (Automation Curriculum)**

Bachelor’s degree in Computer Science engineering with final grade 105/110, at “Università degli Studi Roma 3”.

Internship at MCIPLab (“Models for Critical Infrastructure Protection Laboratory”).  
Thesis title: “Design of a RTU for a temperature and humidity sensor”.

The objective of the thesis was to interface with a humidity and temperature sensor from Texas Instruments, with the goal of designing a Remote Terminal Unit to be mounted on the Testbed Hydra (a simulator of water distributor developed in the MCIPLab of Roma3).

The work required code development in Matlab and Python to set and test the device, the implementation on “BeagleBone Black” and the use of clients to establish a remote connection with the platform.

2007-2012

**Diploma di Liceo Scientifico**

Achieved with final grade 90/100,  
at L.S.S. A. Labriola.

Address: Via Capo Sperone,50-00122 Roma Lido

**PERSONAL SKILLS**

Mother tongue Italiano

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Advanced	Advanced	Advanced	Advanced	Advanced

Skills acquired during the years of study :

- Knowledge of the following programming languages:  
C, Perl, Java, Python
- Knowledge of Matlab/Simulink software, in particular of the tools regarding automatic controls, optimization, system identification.
- Experience with microcontrollers like Arduino and Beaglebone black due to the development of projects and Thesis.
- knowledge of “Ladder” programming language (gained during the development of a university project which required the use of software like: Visual Studio, iFIX, RSlogix)

Digital skills

SELF-ASSESSMENT

Information processing	Communication	Content creation	Safety	Problem solving
Advanced	Advanced	Advanced	Advanced	Advanced

- Good knowledge of Microsoft Office suite
- Advanced knowledge of Windows operative system
- Good knowledge of Linux (Debian, Ubuntu) operative systems.

## Driving Licence B

- Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali".