# Ugo Leone Cavalcanti

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## EDUCATION

**Alma Mater Studiorum, Università di Bologna**.                    **September 2015 – March 2022**

- Master's degree of Computer Engineering (104/110). **Final dissertation**: *Boosting stereoscopic depth estimation CNNs with monocular reasoning* (Topics: Computer Vision, Deep Learning)*.*
- Bachelor of Computer Engineering (96/110). **Final dissertation**: *Autonomous drive vehicles based on mono camera system* (Topics: Computer Vision, Deep Learning, Autonomous Agents, Robotics).

**Liceo Ginnasio Luigi Galvani**, Bologna, BO, Italy                    **September 2010 – July 2015**

Secondary School Diploma in Classical Studies

## SKILLS

- **Languages:** C/C++, C#, Java, Bash, Javascript, SQL, HTML, CSS, Python, Prolog
- Ability in web applications development (using Apache Tomcat, JSP, Java Servlet, Spring, Amazon Web Services)
- Familiarity in Unix/Linux environments, shell scripting and system administration
- Good knowledge of networking
- Experienced in Deep Learning and Convolutional Neural Networks
- Ability to work with Data Base (DB2, MySQL, SQLite, DynamoDB)
- Experienced in embedded systems (SoC, FPGA, Vivado Xilinx Design Suite)
- Great ability and experience in the computer vision and image processing field
- Fluent in English (B2) and with a basic knowledge of Spanish

## PERSONAL EXPERIENCE

- Developed an agent capable of playing a board game called Tablut, having a strong interest in artificial intelligence and autonomous systems
- Realized several drones (quadcopters) using Arduino or STM32 F7 MCU, being passionate about robotics and embedded systems
- Designed and realized a robot capable of managing a tearoom (taking orders, serving and cleaning tables, managing clients' queues and avoiding collisions while moving in the room)
- Developed a self-driving vehicle based on a single camera capable of avoid obstacles and self-determining the correct path to reach the requested position
- Designed and realized an intrusion-detection system for video surveillance based on background subtraction and moving objects analysis and categorization
- Exploited a hardware porting on Xilinx SoC of OpenCV library to realize an embedded image processing pipeline (based on a Zedboard)

## WORKING EXPERIENCE

*Freelance consultant activity,* Bologna, Italy                    **2019 – Present**

- Worked in heterogeneous scenarios from designing embedded packaging-machine control unit for LP Packaging SRL to developing web platforms for Ducati Energia SpA, Gruppo Camst and Regione Emilia Romagna with Homina SRL
- Developed different websites, ecommerce, web front ends for existing servers and database integrations in larger preexistent systems
- Designed and realized web-scrapers and data analysis tools.

*Curricular internship*, **Computer Vision lab**, Unibo, Bologna, Italy                    **2021 – 2022**

- Studied depth estimation CNNs (both mono and stereo)
- Gained deep knowledge of the more popular computer vision software algorithms, libraries and frameworks
- Worked on the master's degree final dissertation, trying to improve a state-of-the-art stereo depth estimation CNN with monocular reasoning.

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*Beyond Common Ideas*, **association**, Bologna, Italy                                                    **2011 – Present**
- Cofounder and lead engineering manager of the association focused in electronic music and visual arts
- Designed software and hardware solutions for interactive audiovisual performances and installations
- Coordinator and leader of the technical team (4 persons) and PR team (2 persons)
- Created video and short films for promotional purposes
- Managed the logistics of the events organized by the association (musical events, workshops, exhibitions) some of which have exceeded 2.500 participants
- Developed a consolidated network of relationships with other subjects operating in the same field to realize more important events, sharing information about the technology and the technique behind our works

*NorthSide*, **association**, Bologna, Italy                                                    **2018**
- Designed and implemented a web reservation system
- Designed and implemented a management and remote monitoring system of company's equipment

*Aelion Project*, **company**, Bologna, Italy                                                    **2016 – 2018**
- Developed microcontroller-based systems for interactive artistic light installations in public events


ADDITIONAL SKILLS & INTERESTS
- Writing, acting, shooting and producing a short film "*Come al Solito*" (2013) presented at *Phoenix Film Festival* 2014 (awarded Best short film), *Visioni Corte* 2013 (won) and *Sardinia Film Festival* 2013 (1st in school category)
- *Horizon* student exchange program in the Netherlands (May 2014) and the natural tendency to travel abroad, which made me discover different environments, cultures, people and the pleasure of adapting myself to changes and to unexpected situations
- Starting in 2014 I had the opportunity to hold some seminars on computer science at my high school and I also started tutoring some students, breaking down complex information into easy concepts for younger students
- Interested in electronic music, DJing, photography and video arts

All these experiences gave me the opportunity to test and increase my expressive skills and team working capabilities.