

## ABOUT ME



I am a **Software Engineer** with comprehensive hands-on experience in autonomous mobile robotics, proven in developing software architecture, behaviors, and estimation algorithms. As a **ROS 2 expert**, I am a member of its Technical Steering Committee and one of the maintainers of its core libraries. I am a **Technical Lead** and a skilled contributor, and I excel at organizing and executing complex projects for small development teams, adhering to **Agile methodologies**, with a focus on **writing clean, well-documented, and thoroughly tested code**. I expertly track team progress and communicate effectively with management and stakeholders through **concise and informative reports**. I remain aligned with business priorities and can **move with urgency** to deliver successful solutions. In my free time, I enjoy a balance of outdoor and indoor hobbies such as hiking, playing board games, reading books, and studying personal finance

## TECH SKILLS



**8+ years experience with C++**

It is my go-to language. I have an in-depth understanding of its features and design choices. I contributed to define coding guidelines for my company and mentored junior developers.

**Proficient with Python**

I often use it for prototypes and non-performance-critical applications.


**Worked on projects using Bash, C, Java, JavaScript, Matlab.**

**Daily user of Docker, Git, LaTeX.**

## LANGUAGES



 **Italian:** Mothertongue

 **English:** Fluent

 **Chinese:** Basic spoken

## EXPERIENCE



### Principal Robotics Engineer | iRobot

 August 2018 – Present

 Pasadena, CA, USA

- Promoted from Robotics Engineer to Senior Robotics Engineer to Principal Robotics Engineer, consistently exceeding expectations.
- Technical Lead of 5 people team that improved ROS 2 performance, reducing CPU usage by over 70%, and deployed it on Roomba™ robots.
- Software Architect for floorcare robots and the Create™3 application.
- Improved accuracy of dead-reckoning through data synchronization.
- Developed libraries for writing strategies using behavior trees.



### Data Scientist | MusixMatch


 January 2018 – July 2018

 Bologna, Italy

Implemented a Java pipeline to recognize products references in lyrics for advertisements recommendations. Developed a Python framework to train and test Neural Networks for different Natural Language Processing tasks.



### Graduate Internship | KUKA Robotics

 July 2017 – January 2018

 Augsburg, Germany

Designed and implemented C++ algorithms for the efficient autonomous exploration of environments using potentially imprecise prior information. Published multiple patents and a paper based on this project.



## EDUCATION



### M.S. Artificial Intelligence and Robotics | La Sapienza

 September 2015 – January 2018

 Rome, Italy

**Final Grade: 110/110 With Honors** | **Thesis:** "Active SLAM using Connectivity Graphs as Prior" **Advisor:** Prof. Giorgio Grisetti



### B.S. Automation Engineering | University of Bologna

 September 2012 – June 2015

 Bologna, Italy

**Final Grade: 109/110** | **Thesis:** "Design and Implementation of the Guidance Law for a Quadrotor Aerial Vehicle" **Advisor:** Prof. Lorenzo Marconi



## AWARDS AND CERTIFICATES



2017 **Sapienza University Excellence Path**

2013 **AlmaTong Double-Degree Scholarship**

## PUBLICATIONS



2019 **Active SLAM using Connectivity Graphs as Priors.** Soragna A., Baldini M., Joho D., Kuemmerle R., and Grisetti G. IROS.

2019 **ROS 2 for Consumer Robotics.** Soragna A., Oxoby J., and Goel D. ROSCon.

2018 **Optimal graph exploration with active loop closure.** Soragna A., Baldini M., and Kuemmerle R. European patent.

2018 **Online adaptation of a prior topology graph to the observed environment during autonomous exploration.** Soragna A., Baldini M., and Joho D. European patent.