Alberto **Soragna**

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ABOUT ME

I'm a Software Engineer with a strong knowledge of the many components of autonomous mobile robotics applications. I worked on build systems and CI/CD, communication middlewares, sensor processing, autonomous behaviors, state estimation and machine learning. I have been the technical lead for robotics software architecture teams. Programming is my passion and I have professional expertise with multiple languages and frameworks. I strongly believe in Open-Source Software: I'm one of the maintainers of ROS 2 and part of the ROS 2 Technical Steering Committee. My free time is split between enjoying outdoor activities and my many hobbies such as lock-picking sports, financial education and programming.

LANGUAGES

- *Italian:* *Mothertongue*
- *English:* *Professional proficiency*
- *Chinese:* *Basic spoken*

SKILLS

TECH SKILLS

***5+ years experience with* C++**
Libraries: Eigen, OpenCV, ROS
***3+ years experience with* Python**
Libraries: Numpy, Scikit-learn, Tensorflow
***Worked on several projects using* Bash, C, Java, JavaScript, Matlab**
***Daily user of* Docker, Git, LaTeX**

SOFT SKILLS

Fast Learner
I'm always curious and eager to learn new concepts in any subject I encounter.
Problem Solver
My objective-driven mindset allows me to quickly find scalable solutions to everyday issues.
Independent
I'm capable of working and of organizing duties with small or no supervision.
Communicator
I have done several publich speeches and created effective presentation slides.

EXPERIENCE

iRobot | Sr. Robotics Software Engineer

August 2018 – Present | Pasadena, CA

Design of the software architecture for floorcare consumer mobile robots. C++ implementation of sensor processing and navigation algorithms. Profiling and optimization of pub-sub communication mechanisms.

MusixMatch | Data Scientist, Machine Learning & AI

January 2018 – July 2018 | Bologna, Italy

Implementation and deployment of Machine Learning, statistics and deep neural network techniques for NLP. Creation of NLP pipeline for lyrics processing. Dataset collection and features engineering.

KUKA Robotics | Software Developer

July 2017 – January 2018 | Augsburg, Germany

Master Thesis student in the Mobile Robotics Navigation team. Development of algorithms for the exploration of industrial environments, active Simultaneous Localization And Mapping, map representation.

EDUCATION

LA SAPIENZA | MSc. Artificial Intelligence and Robotics

September 2015 – January 2018 | Rome, Italy

***Final Grade:** 110/110 Summa cum Laude | **Dissertation:** "Active SLAM using Connectivity Graphs as Prior" **Advisor:** Prof. Giorgio Grisetti*
***Study Emphases:** Mobile Robotics, Computer Vision, Machine Learning, Neural Networks*

ALMA MATER STUDIORUM | BSc. Automation Engineering

September 2012 – June 2015 | Bologna, Italy

***Final Grade:** 109/110 | **Dissertation:** "Design and Implementation of the Guidance Law for a Quadrotor Aerial Vehicle" **Advisor:** Prof. Lorenzo Marconi*
***Study Emphases:** Mathematics, Control Theory, Control System Technologies, Electric Drives*

AWARDS AND CERTIFICATES

- *2017* *Sapienza University Excellence Path*
- *2013* *AlmaTong Double-Degree Scholarship*

PUBLICATIONS

- *2019* *A. Soragna, J. Oxoby, and D. Goel. Ros 2 for consumer robotics. ROSCon, 2019.*
- *2019* *A. Soragna, Baldini M., Joho D., Kuemmerle R., and Grisetti G. Active slam using connectivity graphs as priors. IROS, 2019.*
- *2018* *A. Soragna, Baldini M., and Kuemmerle R. Optimal graph exploration with active loop closure. European patent, 2018.*
- *2018* *A. Soragna, Baldini M., and Joho D. Online adaptation of a prior topology graph to the observed environment during autonomous exploration. European patent, 2018.*