Luca **Bonamini**

ROBOTICS SOFTWARE ENGINEER

✉ lucabonamini28@gmail.com | ⌂ lucabonamini.github.io | in luca-bonamini

Work Experience

Yape s.r.l.
ROBOTICS SOFTWARE ENGINEER

Milan, Italy
Apr. 2021 - Present

- Architect and lead the development of the navigation stack with C++/ROS
- Supervision of the development of a SIL system.
- Development of a C++ library for CAN communication
- Development of an automated data logging system
- Development of an MQTT library in C++ for communication with AWS Cloud
- Development of generalized header-only Kalman Filter library for multi-sensor fusion for localization purpose
- Conduct code reviews and junior engineers tutoring
- Working in an Agile software development environment

Proxima Robotics s.r.l.
ROBOTICS SOFTWARE ENGINEER

Pisa, Italy
Mar. 2020 - Mar. 2021

- Development of a trajectory planning algorithm in a Frenet Frame for obstacle avoidance
- Development of an Adaptive Pure Pursuit controller for path tracking
- Development of tools for offline data debug and visualization
- Development and integration of an automated CI/CD pipeline for production software deployment
- Working in an Agile software development environment

Roboteam Italia
ROBOTICS SOFTWARE ENGINEER

Pisa, Italy
Dec. 2018 - Mar. 2020

- Development of an optimal trajectory planning algorithm for lane change and obstacle avoidance for autonomous racing cars
- Development of a lidar-based localisation system for autonomous racing cars in a GNSS denied environment
- Development of real-time sensors interfaces in ROS
- Development and contribution to an MPC controller for real-time path tracking
- Supervision of a small team of university students

Research Center "E. Piaggio"
RESEARCH FELLOW

Pisa, Italy
Dec. 2018 - Mar. 2020

- Development of an Augmented Reality system for robots teleoperation
- Development a ROS based navigation stack for Alter-EGO project

Education

University of Pisa
M.S. IN ROBOTICS AND AUTOMATION ENGINEERING

Pisa, Italy
Sept. 2015 - Exp. Nov. 2018

- Towards a shared autonomy control framework: application to Ego robot navigation

University of Genova
B.S. IN MECHANICAL ENGINEERING

Genova, Italy
Sept. 2012 - Sept. 2015

- Design of a two-stage parallel shaft gear reducer

Skills

Programming	C++, ROS, ROS2, Python, Matlab/Simulink
Libraries	STL, Boost, Qt, gRPC, Glog, Eigen, PCL
Real-Time Sensors	GPS, IMU, LIDAR, Speed sensors
Message Protocols	Protobuf, CAN, HTTPS, WebSocket, TCP/UDP, MQTT
DevOps	Docker, GitLab CI/CD, Travis, Jenkins, Bash scripting
Tools	GitLab, Git, CMake, gdb
Languages	Italian, English