Mirco Colosi

Curriculum Vitae

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Education and Qualifications

Oct 2017–Today **Ph.D. in Engineering in Computer Science**, *Sapienza University of Rome*, Rome, *Research Field: SLAM, Mobile Robotics, Authonomous Veichle, Life Long SLAM*. Advisor: Prof. Giorgio Grisetti

Sep 2014–Jul 2017 **Master of Science in Engineering in Artificial Intelligence and Robotics**, *Sapienza University of Rome*, Rome, *GPA – 110/110*.

Sep 2010–Mar 2014 **Bachelor of Science in Computer Engineering**, *University of Catania*, Catania, *GPA – 102/110*.

2005–2010 **High School (Scientific) Diploma**, *Liceo Scientifico Enrico Fermi*, Ragusa, Italy, *GPA – 92/100*.

Masters Thesis

Title *ProSLAM student edition: a minimalistic stereo visual SLAM system*

Supervisors Prof. Dr. Giorgio Grisetti & Ph.D. student Dominik Schlegel

Description The aim of this thesis was the development of a fully working, lightweight, graph-based stereo visual SLAM system. I achieved results which are comparable to the state-of-the-art with a simple implementation.

Skills

Computing and Robotics

- Strong C, C++ coding experience (example https://gitlab.com/srrg-students/srrg_proslam_stud);
- Hands-on and theoretical machine learning experience;
- Good knowledge of MATLAB, Python, Java, OpenGL, Bash;
- Strong knowledge of robotics and computer vision libraries and tools: ROS, OpenCV, Stage;
- Daily use of version control software: Git;
- Knowledge of web programming languages: HTML, CSS, Javascript;
- Daily use of Unix/Linux, Windows and Robotics embedded Operating Systems;
- Good experience with Eclipse, LaTeX, Microsoft Office, LibreOffice;

- Good experience in developing mobile multi-robotics applications under ROS environment.

Teamwork

- Member of research laboratory *Ro.Co.Co.* under the supervision of Prof. Giorgio Grisetti as a Ph.D. student;
- Good ability to adapt to multicultural environments and to live in different countries.

Languages

Italian **Mothertongue**

English **C1** *Certification 2014: TOEFL(B2)*

Scientific Activities

Research Interest: SLAM, Mobile Robotics, Robot Control, Autonomous Veichle, Machine Learning, Deep Learning

Publications

[1] Dominik Schlegel, Mirco Colosi, and Giorgio Grisetti. Proslam: Graph slam from a programmer's perspective. *arXiv preprint arXiv:1709.04377*, 2017

[2] Antonio D'Innocente, Fabio Maria Carlucci, Mirco Colosi, and Barbara Caputo. Bridging between computer and robot vision through data augmentation: a case study on object recognition. *arXiv preprint arXiv:1705.02139*, 2017

Reviewer

Conferences ICRA

Projects

oct 2016 – feb 2017 **Gesture recognition for Human-Robot Interaction**, *Sapienza University of Rome*, Rome, Prof. Luca Iocchi.

The aim of this project is to control a robot by user's gesture, using RGBD data collected from a Kinect sensor. The system is a ROS package implemented in C++, using OpenCV for image processing and manipulation.

jun 2016 – dec 2016 **Development of a Simulation Environment for Teleoperated Surgical Task**, *Sapienza University of Rome*, Rome, Prof. Alessandro De Luca, Prof. Marilena Vendittelli.

Realization of a simulative framework for a teleoperation task between a real haptic device *Geomagic Touch* and a virtual manipulator *KUKA LBR 4+*. The surgical task designed is a needle penetration in a simulated biological tissue. The project was accomplished by creating a C++ plugin for V-REP simulation environment.

oct 2015 – dec 2015 **MIDI Classification Using Similarity Metric Based on Kolmogorov Complexity**, *Sapienza University of Rome*, Rome, Prof. Aurelio Uncini.

The project proposes a method to classify MIDI instances by author, evaluating a similarity metric based on the concept of Kolmogorov Complexity. The classifier can be used as first stage of a multi-stage classifier, in order to bias more specifical units. The entire project has been developed in the MATLAB.

sept 2015 – nov 2015 **Implementation of feedback controllers for unicycle robots**, *Sapienza University of Rome*, Rome, Prof. Giuseppe Oriolo.
The aim of this project is the implementation of different regulation and trajectory tracking tasks for a differential-drive robot on several reference trajectories, using ideal or odometric localization, by exploiting the V-REP simulator functionalities. Morover, a custom GUI for parameters insertion has been realized.

dec 2014 – feb 2015 **A Third Person Game Based on the Three.js Library**, *Sapienza University of Rome*, Rome, Prof. Marco Schaerf.
A game based on WebGL using a Javascript library (Three.js) has been developed. The game is standalone and it can be played on a browser that supports HTML5.

References

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