

ABOUT ME

I have master degree in computer engineering with a particular interest in DeepLearning and Computer Vision.

WORK EXPERIENCE

01/09/2020 – 30/06/2021 – Perugia, Italy

Scholarship holder

Università degli Studi di Perugia

Postgraduate scholarship winner entitled "Machine Learning tools and techniques for characterising models for precision agriculture"

01/07/2021 – 30/06/2022 – Perugia, Italy

Academic researcher

Università degli Studi di Perugia

Research grant winner entitled "Development and testing of algorithms for localization, SLAM and navigation of mobile robots: application in agricultural and urban contexts"

EDUCATION AND TRAINING

20/10/2014 – 27/10/2017

Bachelor's Degree in Computer and Electronic Engineering

Università degli Studi di Perugia

07/11/2017 – 08/06/2020

Master Degree in Computer and Robotics Engineering

Università degli Studi di Perugia

EQF level 7

29/07/2020 – CURRENT

Qualification to practice as an engineer, section A

01/11/2020 – CURRENT

PhD Student

Università degli Studi di Perugia

EQF level 8

LANGUAGE SKILLS

MOTHER TONGUE(S): Italian

OTHER LANGUAGE(S):

English

Listening
B2

Reading
B2

**Spoken
production**
B2

**Spoken
interaction**
B2

Writing
B2

PUBLICATIONS

● **S. Felicioni, M. Legittimo, M. L. Fravolini and G. Costante, "GOLN: Graph Object-based Localization Network," 2021 20th International Conference on Advanced Robotics (ICAR), 2021**

2021 <https://ieeexplore.ieee.org/document/9659450>

In the last decades, robotic localization has been mainly addressed with Visual Odometry (VO) or Simultaneous Localization and Mapping (SLAM) approaches, which usually provide an accurate metric precision. Despite the impressive results, these approaches have some shortcomings such as the amount of memory they require and the lack of robustness in non-ideal environments. Inspired by the human capabilities, in this paper we present a novel framework, named Graph Object-based Localization Network (GOLN), to address the topological localization problem with a novel approach, characterized by low memory requirements and robustness with respect to appearance. GOLN is based on a topological map, i.e., a graph, which is fed to a Graph Network (GN) along with global visual features of the environment and returns the estimation of the position node where the robot is located. Experiments have been performed in Unreal Engine (UE4) environments with a simulated ground robot, equipped with a monocular camera

HONOURS AND AWARDS

● **28/09/2020**

Third prize for the "Pegaso 2000 award for the best degree theses related to computer engineering and digital technologies". – Pegaso 2000

MASTER DEGREE THESIS

● **Study and Implementation of Visual Odometry Techniques using approaches based on Recurrent Convolutional Neural Networks for Autonomous Robotics Applications**

In this thesis, a neural network was designed to allow a system to locate itself in space. It was trained using a *self-supervised* approach, thus overcoming the problem of excessive and expensive use of IMU/ GPS sensors.

INTERNSHIP

● **Internship at the University of Perugia**

The training was divided into two projects: 'Improvement of Images Subjected to Random Light Changes Using a Neural Network' and 'Study of Visual Odometry Techniques Based on Recurrent Convolutional Networks for Autonomous Robotics Applications'.