



Mina SORIAL

Profile

A Robotics Software Engineer with wide experience in Computer Vision, AI, Robotic Perception and C++ Programming gained through out my education and work experience.

Objective

An Engineering position that challenges me and allows me to use my past experiences, education, and skills. Passionate to be part of a technically challenging environment that allows for future growth and advancement.

Work Experience

2017– May **PhD Candidate in Bio-Engineering and Robotics**, *Dibris, Università degli Studi di Genova, ITALY.*

Withdrawn at the end of my PhD for health and family reasons.

Title *Obstacle Detection and Avoidance System for Unmanned Surface Vehicle .*

Supervisors Profs. Giuseppe CASALINO, Enrico SIMETTI, Francesca ODONE.

o Main Research tasks and Contributions

- Implementation of obstacle detection system for unmanned surface vehicle.
- Explore different types of detection sensors CCD Camera, LIDAR, Thermal Camera, Radar.
- Rely on state-of-the-art object detection CNN (Convolutional neural network) YOLO to detect obstacles in the image plane.
- Propose an efficient object tracking procedure to track objects across frames.
- Sensor fusion between camera and 3D LIDAR sensors is used to locate obstacles in the world reference frame feeding a path-planning algorithm.
- All the software implementations throughout the research were done using C++, OpenCV, and PCL libraries under ROS environment.

Education

2014–2016 **Master in Advanced Robotics ARIA-ROBA**, *Ecole Centrale de Nantes, FRANCE.*

2009–2014 **BSc Communication & Electronics Engineering** , *Faculty of Engineering, Alexandria University, EGYPT.*

2 El Madares street – Abou El Matamier, Beheira, EGYPT

☎ (+20) 1062739441 • ✉ mina.sorial@outlook.com • 🔗 LinkedIn

1/3

Projects and Internships

Master's Thesis

- Title **Real-time Platooning in Unknown Environment.**
- Supervisors Professor Philippe MARTINET , Olivier KERMORGANT & PhD Engineer Salvador DOMINGUEZ.
- Description The implementation of platooning control system in which the vehicles automatically follow a manually driven leader car in Urban Environment. Under (Ubuntu, C++, Ros) Environment .

Projects

- January– **1st Year Master project**, ECOLE CENTRAL, Nantes, FRANCE.
- June 2016 Serving drinks with Baxter robot using vision based control.
- Supervisors:
 - Professor Gaetan GARCIA.
 - Description:
 - Make the robot track, grab a bottle and a glass, and pour the content of the bottle in the glass using the onboard hand camera.
- January– **4th Year Bachelor project**, ALEXANDRIA UNIVERSITY, EGYPT.
- June 2014 Quad copter and its application.
- Supervisors:
 - Professor Nayira Sediek.
 - Description:
 - The development of the copter was completed through the use of the ArduPilot Mega (APM) flight controller that is based on Arduino Mega 2560. With main application object detection and tracking using and on-board camera..

Internships

- Feb - June 2017 **Software Testing Track**, INFORMATION TECHNOLOGY INSTITUTE (ITI), Alexandria, EGYPT.
- A four months training program in the field of Software development & testing.
- Summer 2013 **Embedded software engineer**, BRIGHTSKIES TECHNOLOGIES, Alexandria, EGYPT.
- Design a car locking system using embedded C and a specially designed Kit.

Technical Knowledge

- Computer Vision (Image Processing, Features detection and tracing, Visual geometry, Visual dometry, Camera calibration, Pose Estimation).
- Vision based Control.
- Localization and Bayesian Estimation (Kalman filter, Particle filter, SLAM).
- Robotics (modeling and control).
- Artificial Intelligence and Machine Learning (Neural Networks, Shortest Path Algorithms, Markov process, Supervised and Unsupervised learning).
- Software Testing (Certified ISTQB Foundation Level).
- SDLC, STLC.
- Agile software development.

Technical Skills

- Programming Skills:
 - C, C++, Python
 - OpenCv, PCL (Point Cloud Library)
 - ROS (Robot Operating System)
- Familiarity with Web development
 - HTML5 / CSS3 / JavaScript
- DBMS
 - Microsoft SQL Server
- Tools:
 - Git version control
 - Matlab, simulink
 - Multisim
 - Microsoft Office, Latex
- Operating Systems
 - Windows
 - Linux
 - Mac Os

Personal Skills

- Problem solving skills.
- Self-motivation and ability to take the initiative.
- Ability to work well under pressure.

Languages & Information

Arabic **Native**
English **Fluent**
French **Intermediate**
Italian **Intermediate**
Full Name **Mina Riad Farid SORIAL**
Nationality **Egyptian**
Date of birth **2nd December 1991**

List of Publications

- M. Sorial, I. Mouawad, E. Simetti, F. Odone and G. Casalino, "Towards a Real Time Obstacle Detection System for Unmanned Surface Vehicles," OCEANS 2019 MTS/IEEE SEATTLE.

Interests

- Traveling
- Reading
- Astrophysics & Space Sciences
- Football