

Mina SORIAL

R&D Software Engineer (Robotics, Machine Learning, Computer Vision)

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EDUCATION

ÉCOLE CENTRAL DE NANTES

M.Sc.ENG IN ADVANCED ROBOTICS
2014- 2016 | Nantes, France

ALEXANDRIA UNIVERSITY

BSC IN ELECTRONICS AND
TELECOMMUNICATION
2009- 2014 | Alexandria, Egypt

DIPLOMAS

ITI EGYPT

DIPLOMA IN SOFTWARE TESTING
2017 | Alexandria, Egypt

COURSEWORK

GRADUATE

- C++ programming techniques
- Ros programming
- Requirements engineering in agile, data-driven development contexts
- Computer vision
- Artificial intelligence
- Software architectures for robotics
- Intelligent vehicles

ONLINE

- Machine learning (Coursera/Stanford)
- Advanced kalman filtering and sensor fusion (udemy)
- Deep Learning Specialization (Coursera)

OTHER ACTIVITIES

CONFERENCES

OCEANS 2019 MTS/IEEE (Speaker)
Seattle, WA, USA

SUMMER SCHOOLS

(MLCC 2019) Machine Learning Crash Course (MIT - IIT - UNIGE)
Genova, Italy

WORKSHOPS

(BTS 2018) Breaking the Surface
Biograd na Moru, Croatia

PERSONAL SKILLS

- Problem solving
- Teamwork
- Self-motivation
- Curiosity

EXPERIENCE

DIBRIS, UNIVERSITÀ DEGLI STUDI DI GENOVA

PHD CANDIDATE BIO-ENGINEERING AND ROBOTICS

October 2017 - May 2022 | Genova, ITALY

Project : Obstacle Detection System for Unmanned Surface Vehicle.

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

- Implementation of obstacle detection system for unmanned surface vehicle.
- Explore different types of detection sensors CCD Camera, LIDAR, Thermal Camera, Radar.
- Propose an efficient object detection and tracking procedure to track objects across frames, exploiting YOLO object detection.
- Implement Sensor fusion between camera, 3D LIDAR, and USV odometry information to locate obstacles in the world reference frame estimating their location heading and velocity.

Status: Withdrawn due to some health issues

LS2N, ÉCOLE CENTRAL DE NANTES

RESEARCH ENGINEER INTERN (MASTER THESIS)

Jan 2016 – July 2016 | Nantes, France

Project: Real-time Platooning in Unknown Environment

Supervisors: Profs. **Philippe MARTINET**, **Olivier KERMORGANT**

- 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.

BRIGHTSKIES | EMBEDDED SOFTWARE ENGINEER INTERN

Summer 2013 | Alexandria, Egypt

- Design a car locking system using embedded C and a specially designed Kit.

SKILLS

SOFTWARE ENGINEERING

- Programming languages and tools
C++ Python C OpenCV PCL ROS Tensorflow Keras
Git Matlab L^AT_EX
- Agile software development
- Software Testing (Certified ISTQB Foundation Level)
- SDLC, STLC

ROBOTICS

- Computer vision (Image Processing, Features detection and tracing, Visual geometry, Visual odometry, Camera calibration, Pose Estimation)
- Artificial Intelligence (NN, CNN, RNN, LSTM, Hyperparameter Tuning, Regularization, Optimization)
- Localization, Bayesian Estimation, Sensor fusion (KF, EKF, UKF)
- Robotics modeling and control

PUBLICATIONS

- [1] M. Sorial, I. Mouawad, E. Simetti, F. Odone, and G. Casalino. Towards a real time obstacle detection system for unmanned surface vehicles. In *OCEANS 2019 MTS/IEEE SEATTLE*, pages 1–8, 2019.