Internship / Master 2 / 2024
Laboratory: MIO and LIS – Toulon University
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Internship on Artificial Intelligence for jellyfish detection and stranding

Jellyfish life cycle and their eventual stranding along the shores represent a growing problem especially along touristic coastlines areas. In the framework of the **ENTEM** project (Etude Numérique et Terrain pour l'Echouage de Meduse ; *numerical and field study of jellyfish strandings*), an internship is proposed for a candidate willing to apply Artificial Intelligence (AI) methods for leveraging available data (mostly satellite data, ocean numerical data and citizen participatory data) concerning jellyfish propagation in the Mediterranean basin and their stranding along the coastline, to predict information related to a major Mediterranean species called *Pelagia Noctulica*.

Existing methods of AI will be selected to carry out the following requested tasks:

- First, a joint analysis of jellyfish stranding data (unique database from citizen participatory science) with numerical weather and oceanographic data will have to be performed. The general goal would be to see if these methods can help in learning and predict jellyfish arrivals along the Mediterranean coastline.

- Second, satellite SAR images (detecting sea surface roughness characteristics) will be used through AI methods to categorize whether surface roughness anomalies could be split into different cases: (i) oil slicks, (ii) plankton blooms and (iii) mass births of jellyfish. This 3rd hypothesis is a recent breakthrough and should also be envisaged through AI learning.

- Then the final wrap up of these tasks could be, depending on the student progress, combining all available information to build a predicting system of jellyfish stranding along the French Mediterranean coasts.

Required skill:

- Artificial Intelligence training

- Data processing

- Team work

- Basics in physical marine sciences would be appreciated

Traineeship duration: 5 to 6 months, possibly starting in january 2024 depending on the candidate availability

Traineeship place: MIO-Toulon, Toulon university campus, La Garde, France