ANNOUNCEMENT FOR PROVISION OF THE WORKPLACE

VAC-2021-02 – Naval Research Engineer

Number of places: 1

Category: Research Engineer (RENG 5)

Workplace: CIMNE's offices of Madrid or Barcelona (to be agreed with the selected candidate)

Salary (gross): 21.277,10 EUR

Weekly working hours: 40

Contract type: Contracts for a specific project or service (linked to the research projects Fibregy and Fibre4Yards)

Duration: until December 31, 2023

Functions to be developed:

CIMNE is looking for a Research Engineer to be part of the Research and Technical Development (RTD) Group "CIMNE MARINE". CIMNE MARINE's activities are related to the development and application of computational methods and assessment tools in the fields of naval architecture, marine and ocean engineering.

The selected candidate will join CIMNE MARINE's research in the development of two ambitious European research projects: FIBREGY and FIBRE4YARDS.

FIBREGY's goal is to pave the way for the extensive use of FRP materials in the structure of the next generation of large Offshore Wind and Tidal Power. In order to achieve this objective, the project will develop, qualify and audit innovative FRP materials for offshore applications, elaborate new design procedures and guidelines, generate efficient production, inspection and monitoring methodologies, and validate and demonstrate advanced software analysis tools.

FIBRE4YARDS is aimed at creating a step change in the design and engineering of small/medium-length FRP vessels, as well as improving its production and maintenance by using advanced production automated technologies (such as adaptive molds, ATP/AFP, 3D printing, curved pultrusion profiles, hot stamping, innovative composite connections) and Industry 4.0 technologies.

The selected candidate will develop his/her work in the context of the above mentioned projects. In particular, the objective of the work is to **apply the scientific knowledge of data sciences and big data techniques for the optimization of the processes involved in shipbuilding and offshore industry**. The optimization will be specially focus to the predictive maintenance of the production assets and the strategies in business

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intelligence using machine learning and deep learning techniques. This work is compatible with the development of a PhD thesis in this field.

Throughout the development of the work, the candidate will actively collaborate with the different EU companies involved in the above mentioned projects as well as various research groups within CIMNE and worldwide.

Required skills:

1. Previous research or academic experience in the field of the position (in particular, MSc studies in Engineering).
2. Excellent academic record.
3. Programming experience in Python
4. High working knowledge of English.

Other valued skills (not mandatory):

1. Mathematical skills: Keen with Computational Methods, in particular IA / ML algorithms.
2. Engineering skills: Keen with DIY (Do It Yourself) projects such as Arduino or Raspberry pi.
3. Experience with Python-based ML-related libraries such as: Tensor-Flow, Numpy, Pandas, Matplotlib, Scikit-Learn or Keras.
4. Programming experience in C++/FORTRAN.

Qualification system:

The requisites and merits will be evaluated with a maximum note of 100 points. Such maximal note will be obtained summing up the following points:

- Academic record: 45%
- Previous research and academic experience in the field of the position: 15%
- Programming skills: 15%
- Engineering skills: 15%
- Language skills: 10%

Candidates must complete the "Application Form" form on our website, indicating the reference of the vacancy and attaching the required documents.

The deadline for registration to the offer ends on March 2, 2021 at 12 noon.

The preselected candidates may be requested to send the documentation required in the "Requirements" and "Merits" sections, duly scanned, and may be called to go through selection tests (which might be of eliminatory nature) and / or personal interviews.