Postdoctoral Position in Data/Information Science

**Implementation of the Common Information Sharing Environment (CISE)
for the EU maritime domain**

Context:

Vessel movements have become available to surveillance authorities through the use of several automated technologies (AIS, SAR images, coastal radar…). Merged and analyzed, together with a large variety of contextual information of different natures and types, positioning data can be used to monitor maritime mobilities, uncover activities that may involve threats to security, illegal trafficking or risks for the environments, living resources and the navigation.

While lot of maritime data are nowadays available, methodologies and processing architectures for data exchanges, standards to harmonize data and metadata description are still missing at the international scale. To address these issues at European level, a C*ommon Information Sharing Environment* (CISE) has been initiated and is currently being developed jointly by the European Commission and EU/EEA member states. It will integrate existing surveillance systems and networks and will provide to all concerned authorities an access to the information they need for their missions at sea. *CISE* will make different systems interoperable so that data and other information can be exchanged easily through the use of modern technologies. CISE architecture and data model is being developed together with operational functionalities and services supporting operational missions of EU/EEA member states.

Under the umbrella of the French CISE project (CISE DMS - Data Mining Service), the research to be addressed concerns the development of innovative analytical algorithms supporting maritime big data for the definition of operational services based on CISE data model and architecture.

– Data fusion, data analytics and quality assessment are considered for the processing for unstructured, multidimensional, inaccurate, inconsistent data.

– Data mining and semi-supervised knowledge discovery techniques are considered for the definition of services designed to detect anomalies or contradictory information which can indicate suspicious behaviors.

Keywords: data mining; machine learning; complex event processing; linear filtering; data fusion; database.

Location: Naval Academy Research Institute (IRENav), France - MOTIM research group, Brest.

Period: 1st of April 2018 – 31 December 2019

Expected skills: good skills in data analytics and tools (SAS, R, etc.); knowledge in statistics and data fusion theory; knowledge in machine learning and event processing concepts. Basis in linear algebra especially multivariate functions and big data principles and architecture. Preferred programming language (Python, Java, C/C ++). Speaking, reading and writing in English.

Net salary: around 2400 Euros/month (medical insurance included).

Imperative: The candidate must be of European nationality.

Contact: Candidates should send their CV, motivation letter, list of publications and 2 letters of reference to Abdel BOUDRAA (boudra@ecole-navale.fr) and Cyril RAY (cyril.ray@ecole-navale.fr).

The application should be sent to Mme Elisabeth TESSIER (elisabeth.tessier@ecole-navale.fr).