



## Title

PostDoc position      AIMS : Big data technologies for real time monitoring of the environmental impact of offshore human activities.

## Information

Employer      University of Caen Normandy – CNRS UMR6072 GREYC – SINAY

Context      AIMS project - Acoustic Integrated Monitoring System - <http://aims.sinay.fr/> supported by Europe and Normandy region through FEDER-FSE 2014-2020.

When      Sept. 2018 – Feb. 2019. (6 months)

Where      CNRS UMR6072 GREYC and SINAY – Caen, France.

Net salary      2,000 € per month, including benefits.

## Keywords

Partial differential equation, deep learning, acoustic, signal processing.

## Technologies

R, Matlab, python, any deep learning framework

## Context

The AIMS project consists of building an integrated system for monitoring offshore human activities to assess the impact of these activities on marine fauna, and especially on marine mammals. The whole system is built around big-data technologies and aims to use benefits of such technologies to collect and analyze all possible data related to the marine environment and the offshore human activities.

## Detailed description

The purpose of AIMS is to design integrated technologies for decreasing the financial, logistical and technical costs of marine environmental monitoring, assessments and studies. AIMS is based on buoys embedding data processing and upload to the data lake. Such devices make it easier to investigate the anthropogenic impact on the wildlife.

Among others, AIMS is investigating new efficient ways for the analysis of the acoustic pollution. For the moment being, simulating sound pollution starting from boat locations (obtained through the Automatic Identification System) requires long computations solving partial differential equation (PDE) such as the Helmholtz one. The aim of this project is to study how deep learning techniques can speed up these long computations.

The candidate will mainly have to:

1. simulate wave equations based on PDE
2. study how deep learning can be used to solve these PDE
3. work in the context of bio-acoustics / marine data.

### **Expected profile**

- Researcher with recent PhD in computer science / applied mathematics / acoustics / signal processing
- Experience with deep learning
- Background knowledge on (acoustic) signal processing
- Perfect English oral and writing skills

### **Application**

For more information about this position, please contact François Rioult ([francois.rioult@unicaen.fr](mailto:francois.rioult@unicaen.fr)).

To apply, send an email **before June 30<sup>th</sup>**, including a motivation letter, a CV, copies of diplomas, contact details of referees.