

## SOFTWARE DEVELOPMENT ENGINEER IN SCIENTIFIC COMPUTING OF SATELLITE IMAGERY

**Open position:** Development engineer

**Location:** Strasbourg – University of Strasbourg

**Job title:** Software engineer for the development and optimization of scientific algorithms for the exploitation of satellite imagery

**Research topics:** Scientific programming, High-performance and cloud-based infrastructure, Optimization

**About the University of Strasbourg and the research programme A<sup>2</sup>S :** The University of Strasbourg in Strasbourg, Alsace, France, is the second largest university in France, with about 46,000 students and over 4,000 researchers and lectures and comprises 38 laboratories and 76 research units. It is a member of several academic networks in Europe and was among the first three universities that entered the French national excellence initiatives (IDEX) in 2011.

Within the University of Strasbourg, **A<sup>2</sup>S constitutes a collaborative research program on the information and knowledge extraction from Earth observation images with a strong focus on ESA's Sentinel satellite program.** In four main axes of research A<sup>2</sup>S develops new image processing chains targeting ground movements, water surfaces, urbanization and change detection. The project is a collaboration between three components of the University of Strasbourg : ICube (Laboratory of engineering, computer science and imaging), EOST (School and Observatory of Earth Sciences) and LIVE (Laboratory for imaging, urban and environmental studies).

### **Job description:**

The engineer will participate in the development of in-house image processing chains for the automatic extraction of information from Earth observation images. This will include the development, optimization and testing of processing algorithms that operate on large image and frequently updated image datasets. The engineer, will closely collaborate with a interdisciplinary team of geoscience and remote sensing researchers to define functional and technical aspects of the algorithm development. He/she will be responsible for the development, implementation and delivery of the defined algorithms and contribute to operational technical solutions for data storage and the integration of the developed tools in high-performance and cloud-based infrastructures. He/she will have knowledge on the current open source projects for the storage and processing of Big Data. The work will focus on the implementation of demonstrator pilots for ground movements analysis.

### **Main tasks:**

- Develop, test and optimize scientific image processing tools (C/C++)
- Contribute to the development of the project's system architecture for large scale image processing
- Contribute to the project deliverables (technical notes, reports, documentation)
- Present the project work (oral and written, in English and French)

**Required education background:** MSc or equivalent in computer science / software engineering (preferably with 1 year of experience in similar projects)

### **Required skills:**

- In-depth C/C++ programming skills
- Experience with one of the following programming language: Java, Scala, Python, R
- Experience with parallel and/or distributed computing paradigms such as Hadoop, Spark, OpenMP or MPI
- Good knowledge in performance optimization and testing
- Good knowledge of the software development cycle and project management
- Basic understanding of remote sensing images and processing is beneficial
- Capacity for team working and exchange with researchers from different application domains
- Capacity to independently document and present the assigned work
- Good level of technical English

**Employer:** University of Strasbourg

**Contract conditions:** Work contract of 12 months (renewable), to start in February 2016

**How to candidate:**

- **Date for the reception of the application:** 10 January 2016
- **Document needed:**
  - Curriculum Vitae
  - Motivation letter
  - Copy of the diplomas
  - Example of codes / software developed

The documents need to be addressed by mail to Jean-Philippe Malet - [jeanphilippe.malet@unistra.fr](mailto:jeanphilippe.malet@unistra.fr)

Orals will be organized in January 2016.

**Contacts :**

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