2018-00644 - Temporary scientific engineer / Optimization, machine learning and statistical methods / Engineer position/software development and supervision in Image Processing at INRIA Bordeaux Sud-Ouest and i2S company, France

Contract type: Public service fixed-term contract
Level of qualifications required: Graduate degree or equivalent
Function: Temporary scientific engineer
Level of experience: Recently graduated

About the research centre or Inria department

Team presentation

GeoStat projecting makes fundamental and applied research on new non linear methods for the analysis of complex signals and systems, using paradigms and tools coming from statistical physics.

Research themes

GeoStat's research theamtics are centered on the following theoretical developments:

- Multiscale methods developed in Physics for the analysis of complex systems
- Predictability in complex systems
- Multiresolution analysis
- Analysis, classification, detection

and the following applied objectives:

- Analysis of complex and turbulent signals in earth observation, astronomy and remote sensing
- Digital implementation of adaptive optics in astronomy
- Analysis of biomedical signals

International and industrial relations

GeoStat is working in close collaboration with the following teams:

- Laboratoire d'Astrophysique de Bordeaux
- ICM-CSIC, Department of physical oceanography, Barcelona, Spain
- LEGOS Laboratory, UMR CNRS 5566, Toulouse, France
- Laboratory of theoretical physics and condensed matter University Paris 6, CNRS UMR 7600, Paris, France
- IRIT, UMR CNRS 5505, Toulouse, France

Context

INRIA Geostat team (http://geostat.bordeaux.inria.fr/) and I2S company (http://www.i2s.fr/) are collaborating starting from 2017, and for a 3 year duration period, in an ambitious project related to the use and direct implementation of sparse methods and non convex optimization for Image Processing using GPU.

Assignment

This engineer position consists in developing a project involving the implementation of non convex optimization and sparse for providing efficient solutions to problems related to denoising, filter...
parameter learning, and other image processing problems in high resolution digitization of natural
colour images.

Main activities
The engineer will work in close collaboration with research and implementation teams at INRIA and
i2S respectively.

He/she will co-develop the effective implementation of an efficient high-resolution scanning system
at i2S company using the approach described in the following document: https://hal.inria.fr/tel-
01239958, which has been published at best internal conferences and journals (ECCV, CVPR, ICIP,
SIGGRAPH ASIA, IEEE TIP). The candidate will work in close collaboration with i2S development team.

He/she will supervise the implementation (using GPU) of innovative solutions subject to direct
computer implementation.

Skills
The applicant must have skills in project development, C++, GPU,
image processing and signal processing.

Benefits package
- Subsidised catering service
- Partially-reimbursed public transport

Remuneration
Remuneration: between 2632 € and 2936 € according to experience.