Title : High resolution color imaging : use of sparse and non convex optimization methods.

Type : Post-doctoral
Location : INRIA Bordeaux Sud-Ouest, FRANCE
Research theme : Image processing
Projet : GEOSTAT (http://geostat.bordeaux.inria.fr/)
Duration : 2 years
Salary : INRIA is a national research center, offering remuneration on equity regulations. Salary is based upon INRIA salary grid.

About INRIA

« Established in 1967, Inria is the only public research body fully dedicated to computational sciences. Combining computer sciences with mathematics, Inria’s 3,500 researchers strive to invent the digital technologies of the future. Educated at leading international universities, they creatively integrate basic research with applied research and dedicate themselves to solving real problems, collaborating with the main players in public and private research in France and abroad and transferring the fruits of their work to innovative companies.

The researchers at Inria published over 4,500 articles in 2013. They are behind over 300 active patents and 120 start-ups. The 172 project teams are distributed in eight research centers located throughout France. »

The post-doctoral will work at INRIA Bordeaux Sud-Ouest in the GEOSTAT team http://geostat.bordeaux.inria.fr/.

Mission

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. This post-doctoral position consists in extending and adapting the use 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.

Description

The candidate will work in close collaboration with research and implementation teams at INRIA and I2S respectively. He/she will conduct effective and innovative solutions using non convex optimization methods developed in the GEOSTAT team and 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 supervise and work in close collaboration with researchers from the GEOSTAT team and engineers at I2S and GEOSTAT. He/she will adapt, propose innovative solutions subject to paper plucation and direct computer implementation.
Skills

Applied mathematical methods for optimization, image processing, GPU implementation. High level computer science skills and programming.

Working environment

The applicant will benefit of outstanding working and research environment conditions available at INRIA. The INRIA Bordeaux centre is the most recent of INRIA research centres, located on the Bordeaux University campus.

Supplementary information

Contact: H. Yahia, GEOSTAT team manager,
hussein.yahia@inria.fr,
+33 (0)6 30 96 22 83.