

Implementation and development of algorithms for image improvement applied to scanned books

Goals:

The mission will take place as part of the digital book activity of the company. This activity aims at providing solutions for archives and libraries to digitize and exploits their funds. Image restoration applied to old books images is currently poorly treated topic in research and still remains an open problem. The quality of input images is a requirement of quality in the overall document processing. Thus, the job will be aimed at improving several algorithms of restoration of digital images of scanned books. The candidate will also have to propose and develop new algorithms to improve the quality of these images (denoising, automatic cropping, locating book's binding, and automation of processes). The result of the job will be software bricks reusable in products of the company (software products or book scanners).

Keywords:

Signal processing, image processing, image restoration, Optical Character Recognition

Company:

i2S is an international group that is a recognized leader in the markets of digital vision, optronics and image processing. For more than thirty years, *i2S* has distinguished itself as a pioneer in extreme-condition digital vision and image processing solutions for customers requiring high image quality, ever-increasing camera performance and image processing systems that are increasingly intelligent and flexible. Thus, *i2S* is leader on the commercial and technological market of book scanners.

Qualification required:

- Master's degree in computer science or a related field such as electrical, telecommunications engineering, Mathematics or Physics
- Good programming skills in C++
- Good applied mathematical understanding
- High motivation in research and technologies
- Good communication skills in English. French knowledge is welcome but not mandatory
- Proven knowledge and experience in computer vision and image/signal processing will be an asset

Context: This PhD position takes place in the context of a French CIFRE convention (Industrial Convention for Training through Research). The candidate will be attached to the *i2S* company and the University "Bordeaux 1". The candidate will be employed by the company during the whole duration of the thesis. Applications are open to all nationalities. The candidate must have received recently his certificate conferring his Master's degree.



Location:

i2S

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Contact: Feel free to contact Dr. Eric TRINH (e.trinh@i2s.fr) for any related questions.

Application:

Applicants should submit a complete CV to: e.trinh@i2s.fr