

## Internship in Image processing: 2 months. for -summer 2020

### Porting of processing software to GPU

#### Company description

Incorporated in 2010 and based in Paris, BioAxial develops and markets breakthrough super-resolution (SR) imaging solutions for the study of live cells and fixed biological samples. Our technology is based on LiveCODIM, a unique beam shaper that combines the best from SIM SR technology with confocal microscopy's point scanning geometry.

BioAxial offers a challenging and agile work environment that promotes creativity. The candidate will be joining a multi-disciplinary R&D team with backgrounds in physics, optics, biology, mathematics, software and system engineering.

#### Internship description

The actual processing method uses Fourier Transform method to calculate the reconstruction of the images. However, due to the small size of the images involved, a direct calculation, may be more efficient both on CPU and GPU. A framework has been developed and the aim of this internship is to implement and validate this framework.

#### Timetable

A tentative schedule of the internship is as follows:

- 1 week of learning the concepts and specificities of CODIM technology.
- 1 weeks learning the actual simulator software
- 2 weeks porting the simulator from FFT type implementation to Spatial implementation in C++
- 3 weeks of porting the code to GPU (a first version is already available)
- 1 week of tests
- 1 week of documentation

#### Profile

Education/Experience: The candidate will possess the following combination of knowledge, skills, and experience:

- Student in Engineering with a good knowledge of C++ programming and a basic skill in CUDA and GPU
- Strong problem solving skills.
- Software skills and ability to program in a methodologically stable environment.

#### Contact:

If you'd like to join our team and also like to be involved in exciting and challenging work in the cutting edge technology, please send your resume to us.

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