

AI/IE COMPUTATIONAL BIOLOGY (position available as soon as possible / 3 to 4 month CDD from June to September 30th)

The team of Benedicte DELAVAL is looking for a computational biology engineer to develop the necessary tools and approaches to analyse, from the cellular to the tissue scale, complex imaging datasets from 3D spherical culture of kidney cells to tubular organ visualized directly in vivo in zebrafish embryo. Image datasets include 3D and 3D+time spinning disk confocal images (fluorescence images of cell membrane with or without nuclear staining). The team uses these biological models to study the impact of dynamic events such as, cell shape and size changes or cell division on kidney tubule shape and size. The candidate will work in collaboration with Nicolas Taulat an engineer in the team who is implementing the experimental systems. The development of image analysis tools will be performed in collaboration with the image analysis platform of MRI.

Montpellier (Volker Baecker, MRI).

This project will involve:

- the use of already existing tools (FIJI- Image J, imaris, cellpose, napari...)
- the implementation and development of new computer tools to segment, study, measure and visualize cells and multicellular structures. The candidate will use experimental data collected in the team (3D images and 3D+time, spinning disk confocal microscopy).
- the quantification of various parameters (cell and multicellular structure volume, size, regularity...) on normal and perturbed multicellular systems.
- if possible 3D cell tracking of nuclei

The candidate will have computational skills and knowledge in image analysis softwares. The candidate should have some interest and ideally some knowledge of fluorescent microscopy and/or cell and developmental biology.

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