



Job : Image analysis Engineer
CDD : 17 months
City : Clermont-Ferrand, France

Job description

For the past 15 years, the UMR PIAF has been using X-ray microtomography to observe plant-based materials such as wood from branches, stems, and roots, as well as heritage objects made of wood or other biosourced materials. These activities are integrated within the national platform Phenobois (<https://phenobois.hub.inrae.fr/>). As part of the acquisition of a new X-ray microtomograph—a tool that will be integrated into the PHENOBOIS platform—the need for 3D image analysis will increase significantly.

To manage the growing volume of data to be analyzed, it is relevant to develop tools for the pre-processing, or even automated processing, of 3D volumes obtained from X-ray observations. Given the platform's focus on plant observation, particularly wood at scales ranging from the cell to the tissue level, the goal is to develop automated image processing and analysis tools. These tools will extract parameters such as the number, size, and type of cells. We will aim to implement tools for segmentation, labeling, and recognition of plant cells.

A component dedicated to volume comparison will be developed, requiring spatial alignment operations. Artificial intelligence will be employed to learn, in particular, the recognition of cell types. A dataset acquired using synchrotron radiation will be available as reference data.

The position is to be filled starting in November or December 2025, with the exact date to be discussed with the candidate. The successful applicant will join the "Ingénierie Pour l'Arbre" team at UMR PIAF (<https://piaf.clermont.hub.inrae.fr/>) on the Crouel site.

Skills

- ✓ Image analysis. Skills in 3D imaging would be appreciated.
- ✓ Python coding
- ✓ Strong interest in working in an inter-disciplinary context
- ✓ Ability to work independently and as a member of a research team
- ✓ Interest for biological objects would be appreciated; but is not compulsory

Employer and conditions

The employer is the Université Clermont Auvergne. The job will be at the PIAF, 5 chemin de Beaulieu, 63000 Clermont-Ferrand

Contract for 17 months. Salary: 2210.33 € brut/month

Application

Interested candidates are invited to submit a cover letter, an up-to-date CV and the contact details of at least one reference to eric.badel@inrae.fr or cyril.bozonnet@inrae.fr

<https://piaf.clermont.hub.inrae.fr/le-piaf/dispositifs-d-experimentation/methodes-et-modeles/microtomographie-a-rayons-x>