

Job Description: Image Processing / Computer Vision Engineer

Assignment Unit	LIRMM (Laboratory of Computer Science, Robotics and Microelectronics of Montpellier)
Location	Montpellier, France
Contract Type	12-month fixed-term contract, renewable
Starting Date	Septembre 2026
Work Schedule	Full-time

Position Objectives

The successful candidate will work on the **PERLE project**, which aims to develop **gesture assistance for robotic shoulder prosthesis placement**. This interdisciplinary project combines **medical robotics and image processing / computer vision** to enhance the precision and safety of robot-assisted surgical procedures.

Your primary mission will be to **design, develop, and implement algorithms** in order to automate both the **segmentation** and **morphometrics analysis** of **pathological bony structures** using anatomical data of the shoulder (3D images, point clouds, etc.). You will work closely with researchers, clinicians, and engineers to integrate your developments into a surgical workflow that aligns with clinical reality.

More specifically, you will be in charge of:

- Conducting a **literature review** of existing techniques for segmenting and analyzing anatomical structures of the shoulder.
- Taking ownership of the **data acquisition systems** available for the project.
- Designing and implementing **image processing / computer vision algorithms**.
- Establishing **validation protocols** to quantify the performance of developed algorithms using real or simulated data.
- Writing **technical documentation and progress reports**.
- Contributing to the **presentation** of obtained results (team meetings, seminars, etc.) as well as the writing of **scientific articles** and patents, if applicable.

Required Profile and Skills

- Degree from an **engineering school**, **Master's degree**, or **PhD** in **robotics**, **computer vision**, **image processing**, or a related field.
- **Proven experience** in software development with **Python** (**OpenCV** and/or **scikit-image** libraries) and **C++**.
- Strong interest in **experimentation** and a high degree of **autonomy**.
- Excellent **written English skills** for reading and writing technical documentation.

Work Environment

The successful candidate will join the **DEXTER team**, which focuses on cable-driven and medical robotics. He or she will be based at the **LIRMM's surgical robotics technical platform**, which is located at the **University of Montpellier School of Medicine**. The project will be jointly supervised by: Lucas Lavenir, Research Engineer and Technical Manager of the platform, Nabil Zemiti and Philippe Poignet, Professors and Scientific Managers of the platform.

Application Process

Please send a detailed CV and a cover letter to the following contacts:

- Philippe Poignet, Professor at the University of Montpellier, LIRMM
philippe.poignet@lirmm.fr
- Nabil Zemiti, Professor at the University of Montpellier, LIRMM
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- Lucas Lavenir, Research Engineer at CNRS, LIRMM
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