

PhD Position – Radar & LiDAR Sensing for Continuous Microgesture Recognition

F.R.S.-FNRS COSMIC Project | UCLouvain, Louvain-la-Neuve, Belgium

Project COSMIC
Grant approximately € 2,500/month
Location Louvain-la-Neuve, Belgium

Duration 4 years
Start as soon as possible / to be agreed
Deadline open until filled

The COSMIC project

COSMIC (COntinuous MICrogesture acquisition and sensing for natural interaction) aims to develop methods for the **continuous detection and recognition of subtle finger and hand microgestures in realistic environments**. Funded by the **F.R.S.-FNRS**, the project brings together UCLouvain and the University of Luxembourg to develop new sensing and recognition approaches for natural, real-time human–computer interaction.

Your PhD research

You will focus on **radar and LiDAR sensing for continuous microgesture detection and recognition**, combining experimental measurements, signal processing, physical modelling and data analysis.

Main research activities

- Design and perform radar/LiDAR microgesture experiments.
- Develop signal processing, radar modelling and inversion methods.
- Acquire and analyse multimodal datasets in controlled and realistic conditions.

Scientific objectives

- Detect and track subtle micro-motions continuously and in real time.
- Develop recognition and sensor-fusion strategies.
- Validate the methods in interactive prototypes and publish the results.

Profile we are looking for

- MSc degree in **engineering, bioengineering, computer science, robotics, physics**, or another relevant scientific field.
- Strong background in **signal processing, mathematics and programming**.
- Interest in radar, LiDAR, inverse problems and/or machine learning.
- Experience with **Python, MATLAB and/or C/C++** is an asset.
- Interest in multidisciplinary research combining sensing and human–computer interaction.
- Good written and spoken **English**, autonomy, creativity and enthusiasm for research.

Supervision & research environment

The PhD will be jointly supervised at UCLouvain by **Prof. Sébastien Lambot** (Earth and Life Institute / Louvain Georadar Research Centre; radar physics and modelling) and **Prof. Jean Vanderdonckt** (LouRIM; human–computer interaction and gesture modelling), within the interdisciplinary COSMIC team involving UCLouvain and the University of Luxembourg.

Interested? Apply now.

Send a **single PDF in English** containing your **CV, motivation letter and academic transcripts** to:
sebastien.lambot@uclouvain.be.

Applications will be considered until the position is filled. Please mention **“COSMIC PhD application”** in the subject line.