

## Research profile

### Data science and IT

The person who will be selected for this position will join the LIRIS (UMR CNRS 5205) which displays skills on all stages of the chain of processing of large data sets; the data can be in different forms. She/he will work on the design and development of methods and algorithms in this research area, both on the theoretical aspects, as well as on their applications to large data volumes (Big Data) coming from various fields, especially industrial (e.g., predictive maintenance, systems recommendation, service improvement). More specifically, recognized expertise on the various stages of the «KDD» process is expected: storage, management, data mining, learning, visualization. The applicant must present a project of integration into one of the research teams of the LIRIS and must show her/his scientific maturity demonstrated by publications at the best scientific level.

Workplace:  
**LIRIS**

Director:

**Mohand-Saïd Hacid**  
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## Teaching profile

### Data science and IT

The person recruited will teach IT at INSA Lyon's Industrial Engineering (GI) department and will be involved in training engineering students over the three years. They will be involved in setting up the research & development programme for the data science courses: data mining, automatic learning, data visualisation and business intelligence. These courses should be illustrated with applications intended to describe, explain or predict the behaviour of industrial processes. An initial experience and/or a particular interest in the study of such processes would be particularly appreciated.

The applicant will also support the teaching team in the various fields of IT study within the department: algorithmics, object-oriented programming, modelling, information systems and business intelligence.

Finally, the person recruited will help to monitor the students individually or in groups by supervising academic projects, industrial internships and Final Year Projects. They will also take part in activities of general interest within the department. Good knowledge of the industrial sector as well as the ability to teach in English are required.

Teaching Department:

**Industrial Engineering Department**

Workplace:  
**INSA Lyon**

Department Director:

**Julien Fondrevelle**  
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URL

<http://gi.insa-lyon.fr/>

## Interview

### Compulsory scenario

#### Purpose of the scenario

Perceiving the applicant's teaching ability and his/her ability to adapt to an audience of students at levels L1 to L3 (1st to 3rd year of an undergraduate degree) on a subject related to the role's teaching profile. The subject will be specified in the invitation letter.

#### Scenario length

It represents approximately 20% of the total interview time. It must last longer than 3 minutes.

#### Equal treatment of applicants

As the scenario is incorporated into the interview, to ensure that the applicants are treated equally, each applicant's scenario will be conducted exclusively in front of the COS members.

- **Language** : During the interview, the applicant must speak in French with approximately 3 minutes in English (save for exceptional cases justified by the teaching needs).

- In order to strike a balance between training and research, the CAR (Regional Academic Commission) requires interviewed MCF and PR applicants to be informed that they must devote an approximately equal time to the training (including the scenario) and research components during their interview.

*Example of how time is divided during the interview: 10 min on the research project, 10 min on the training project, 5 min for the scenario, 15 min of questions (the 3 minutes in English are incorporated into one of the previous parts)*

URL

<http://liris.cnrs.fr/>

## Research laboratory description

The Laboratoire d'InfoRmatique en Image et Systèmes d'information (LIRIS) is a research unit (UMR 5205) affiliated to CNRS, INSA Lyon, Université Claude Bernard Lyon 1, Université Lumière Lyon 2 and Ecole Centrale de Lyon. It includes 330 members. Its main scientific research area is Computer Science, and more generally Sciences & Information Technologies.

A significant part of the research conducted at LIRIS lies at the leading edge of our discipline, looking at major societal issues. Some of our research activities are at the interfaces with engineering, human and social sciences, life sciences and environmental sciences. The laboratory's 6 areas of expertise contribute in a balanced way to optimise our research work. Moreover, the LIRIS maintains numerous links with its social, economic and cultural environment at local, regional and national levels. Interactions with companies are based on collaborative projects.

The LIRIS covers scientific themes organised in 6 areas of expertise and has 14 teams:

- **Computer Vision and Pattern Recognition** (team: IMAGINE)
- **Geometry and modeling** (teams: GEOMOD and M2DISCO)
- **Data Science** (teams: BD, DM2L and GOAL)
- **Services, Distributed Systems, and Security** (teams: DRIM and SOC)
- **Simulation, virtuality, and computational sciences** (teams: BEAGLE, R3AM and SAARA)
- **Interactions and cognition** (teams: SICAL, SMA and TWEAK)

The work of the research teams also has applications in the following areas: Biology and health (modelling of life mechanisms, engineering for health), Ambient intelligence (pervasive and distributed systems, intelligent monitoring, stand-alone systems), Human learning (personalisation, cognitive support, collaborative learning support, serious gaming, digital entertainment), Scientific computing (processing large quantities of data – big data).