# D2C DATAIA CLUB CONNECTION

# MEDICAL IMAGING

June 24, 2021



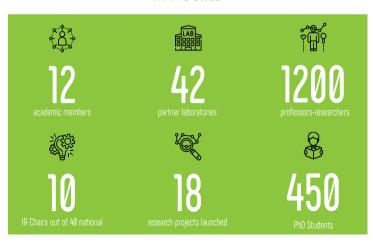
# The DATAIA Paris-Saclay Institute

Located within the Paris Saclay University (16th in the Shanghai ranking, 1st in mathematics), it is the first French ecosystem in data sciences, Al and their societal impacts.

### **MISSION**

To bring together multidisciplinary expertise and boost the collective strength of its partners in the Paris-Saclay cluster with the aim of combining big data and AI technologies with social sciences and humanities for an AI at the service of humans.

### IN FIGURES



# Industrial Affiliation Plan (PAI)

The Industrial Affiliation Plan (IAP) aims to boost the collective strength of the Institute's academic ecosystem and its industrial members. The services offered in response to the respective needs expressed include:

- Joint actions to support research;
- · Sharing of experiences and collective needs;
- Facilitated access to recruitment;
- · Access to training, seminars, workshops, etc.;
- Implementation of dedicated events (hackathons, challenges, etc.);
- Access to working places to increase exchanges.

# DATAIA Club Connection (D2C)

The D2C system aims:

- **Upstream**, to present the priority research issues and to match them with the problems of industry;
- **Downstream**, to monitor contacts and opportunities for collaboration identified until they are set up and launched.

It is part of the ambition to facilitate the establishment of several levels of collaboration and create a constructive dynamic:

- 1. Expertise / Student projects / Internships
- Research collaborations / CIFRE theses
- 3. Joint laboratories / Joint teams
- 4. Multi-partner chairs

# Objectives and program

The main objectives of the D2C «Medical Imaging» to address are:

- Solutions for processing, reconstructing and recalibrating medical images;
- Image analysis for diagnosis, segmentation, classification;
- Detection of anomalies and lesions:
- Construction of avatars for the rehabilitation of sick people.

**2pm - 3pm** 3' pitches by DATAIA researchers on

prospective research topics followed by

industrialists on related issues

**3pm - 4pm** Individual appointments of 15', with a view to

setting up new collaborations

# DATAIA researchers

### Deep Learning on imaging data in cancerology



Maria Vakalopoulou (CentraleSupelec CVN)
Research: computer vision, machine learning, medical image analysis

### Segmentation (cardiovascular MRI; OCT of the eye; MRI of the prostate)



**Désiré Sidibé** (University of Evry, IBISC) Research: learning and image analysis, vision for robotics

### Surgeon training - Organ reconstruction



**Hedi Tabia** (University of Evry, IBISC)

Research: image analysis and segmentation. Human-computer interaction

### EEG. Spectroscopy / Infrared. Scanner / X-ray. Statistical signal processing



**Florent Bouchard** (CentraleSupelec, L2S)
Research: Robust learning in the framework of structured covariance matrices

### Brain interfaces and time series



**Sylvain Chevalier** (UVSQ, LISV)
Research: learning and geometric approaches. Teledetection

# DATAIA researchers

Cardiovascular imaging: quantifying blood movement



Nora Ouzir (CentraleSupelec CVN, Inria OPIS)
Research: Image registration. Topographic MRI modalities
Ultra sound. Doppler imaging

Imaging in oncology and neuroimaging: nuclear imaging, MRI + ultrasound + PET + multimodal tracers



**Sebastien Jan** (CEA, BioMaps)
Research: Radio therapy - Nuclear physics



**Claude Comtat** (CEA, BioMaps) Research: PET-MRI. Tomographic reconstruction



**Florent Sureau** (CEA, BioMaps)
Research: PET reconstruction: deep learning



**Florent Besson** (CEA, BioMaps)
Research: PET-MRI. Applied deep learning. Medicine data warehouse APHP

# DATAIA Club PAI Companies

Mamography Department: image quality, noise reduction Interventional Imagina Department: image processing and auglity. 3D reconstruction Radiology and Clinical Research Department



Nicolas Gogin - Post-processing, CT/MRI GE Healthcare Vincent Jugnon - X-Ray Interventional Imaging Thomas Benseahir

Overview of imaging: supervision, segmentation, reinforcement learning



# Invited companies

### Extraction of clinical radiology data from oncology patients



Romain Cazavan - CEO Nicolas Dubost - CTO

### Heart failure in cardiovascular imaging



**Jean-Joseph Christophe** - CEO **Ninon Mouillon** - Sales

# Institutional partners

















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