



# Artificial Intelligence

## Medical Physics & Radiation Oncology

November  
8<sup>th</sup> - 9<sup>th</sup> - 10<sup>th</sup>  
2021

École des Sciences  
et du Cancer  
Paris - France

Registration at  
[www.siricsocrate.com](http://www.siricsocrate.com)

Due to recent increase in  
SARS-CoV-2 infections all over  
Europe, the master-class has  
been postponed.



# FINAL PROGRAM

## Artificial Intelligence Medical Physics & Radiation Oncology

Gustave Roussy, 114 rue Edouard Vaillant, 94800 Villejuif - France

### November 8, 2021

#### MORNING

08:30	Welcome coffee	
09:00 10:00	Introduction to Artificial Intelligence (vocabulary, methodology)	<b>Nikos Paragios</b> Thérapanacéa Centrale Supélec, Paris
10:00 10:30	Applications to radiotherapy and medical imaging : the radiation oncologist's point of view	<b>Vincent Grégoire</b> CLCC Léon Bérard, Lyon
10:30 11:00	Applications to radiotherapy and medical imaging : the medical physicist's point of view	<b>Charlotte Robert</b> Gustave Roussy, Villejuif Université Paris Sud, Saclay
11:00 11:15	Break	
11:15 12:30	Python refresher course	<b>David Sarrut</b> CREATIS, Lyon
<h4>AFTERNOON</h4>		
12:30 02:00	Lunch	
02:00 05:00	Practicle session 1 - Python	<b>David Sarrut</b> CREATIS, Lyon

### November 9, 2021

#### MORNING

08:30	Welcome coffee	
09:00 10:30	Optimization and main machine learning algorithms (SVM, Random Forest, ...)	<b>Chloé-Agathe Azencott</b> Mines ParisTech, Paris

November 9, 2021

10:30 10:45	Break	
10:45 12:00	Optimization and main machine learning algorithms (SVM, Random Forest, ...)	<b>Chloé-Agathe Azencott</b> Mines ParisTech, Paris
AFTERNOON		
12:00 01:30	Lunch	
01:30 03:00	Practical session 2 - Machine learning: radiomics for brain tumor classification - part 1	To be determined
03:00 03:15	Break	
03:15 05:00	Practical session 3 - Machine learning: radiomics for brain tumor classification - part 2	To be determined

## November 10, 2021

MORNING		
08:30	Welcome coffee	
09:00 10:30	Deep learning and neural networks - part 1	<b>Vincent Lepetit</b> École nationale des Ponts ParisTech, Marne la Vallée
10:30 11:45	Break	
10:45 12:00	Deep learning and neural networks - part 2	<b>Vincent Lepetit</b> École nationale des Ponts ParisTech, Marne la Vallée
AFTERNOON		
12:00 01:30	Lunch	
01:30 03:00	Practical session 4 - Deep learning : segmentation of brain magnetic resonance images - part 1	<b>Alexandre Cafaro</b> Therapanacéa <b>Amaury Leroy</b> Gustave Roussy, Villejuif <b>Rahimeh Rouhi</b> Gustave Roussy, Villejuif
03:15 05:00	Practical session 5 - Deep learning : segmentation of brain magnetic resonance images - part 2	

**NB:** During the 3 days, participants must be in possession of a personal laptop. Instructions will be given prior to the training for the installation of a Python environment.