



SUMMER SCHOOL 2020

ADVANCED NEURAL NETWORKS & INNOVATIVE APPLICATIONS

6-10 JULY 2020

Pierre and Marie Curie Campus - Sorbonne University & Ircam - Centre Pompidou

This school offers courses, conferences and workshops on neural networks applied to a large number of fields, from vision to law. It brings together researchers from Sorbonne University, international colleagues and scientists from the industry, in order to offer a global vision of the current AI research landscape. This summer school is offered at the PhD level.

INSTRUCTORS



Anastase Charantonis

I am a lecturer at ENSIIE (École nationale supérieure d'informatique pour l'industrie et l'entreprise) working on Machine Learning and Geoscience. I'm interested in classification and clustering

methods, hidden Markov chains, as well as current deep learning methods combining modern architectures such as Long Short-Term Memory based Convolutional Recurrent Neural Networks.



Matthieu Cord

I'm Professor at Sorbonne University, researcher in the MLIA team of the LIP6 lab & part time senior scientist at valeo.ai My research interests include Image Processing, Computer Vision, Deep Learning, Pattern Recognition, Machine Learning for Multimedia and Computational Cooking.



Olivier Cussenot

I'm a professor at Sorbonne University in the Faculty of Medicine, and a surgeon in urology, oncology and medical genetics. Currently Chief of the Department of Urology at Tenon Hospital, I am interested

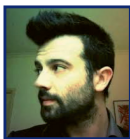
in semiotic analysis of molecular data in onco-urology and the use of artificial intelligence for precision oncology, clinical research and mitigation of risks in the management of cancers.



Kenji Doya

After being a research associate at U. Tokyo, U. C. San Diego and Salk Institute, I was appointed Principal Investigator of the Neural Computation Unit at Okinawa Institute of Science and Technology

in 2004. I'm currently interested in understanding the functions of basal ganglia and the cortical circuit based on reinforcement learning and Bayesian inference.



Philippe Esling

I am currently an Associate Professor at Sorbonne University and I conduct my research in data mining and artificial intelligence at IRCAM, where I am head of the ACIDS research group within the

Musical representations. I teach computer science and mathematics at Sorbonne University. I also participate in ecological monitoring and metagenomics research with Geneva university.



Patrick Gallinari

I'm Professor at Sorbonne University, researcher in the MLIA team of the LIP6 lab. My research focuses on statistical learning with applications in different fields such as semantic data analysis and

complex data modeling. I discovered the ML domain in the mid 80es when I started to work on Neural Networks, an emerging field at that time. I have been one of the pioneers in this field in France and worked on the topic for about 10 years before switching to more general ML models. During this period I also investigated different application domains like Information Retrieval, Social Data Analysis and User Modeling, ... Over the last years my research mainly focused on ML for structured data (sequences, graphs etc) and of course Deep Learning.



Stéphane Gazut

I am a researcher in artificial intelligence at the Data Science and Decision Laboratory of the French Alternative Energies and Atomic Energy Commission (CEA). I am interested in machine learning and data mining applied

on biology & health applications (data mining and feature selection in large datasets, disease status prediction ...) in the context of personalized medicine and decision-making tools.



Aurélie Jean

I've been navigating for more than 10 years in computational sciences applied to engineering, medicine, education, economy, finance or journalism. After 9 years in the USA, in organizations such as

Massachusetts Institute of Technology or Bloomberg, I now live and work in the USA and France, where I lead In Silico Veritas - a development agency in computer modeling and analytics. I'm a senior advisor at the Boston Consulting Group and Altermind, mentor for the Frontier Development Lab at NASA, and I teach algorithm at MIT and conduct research on algorithms, and write for Le Point and Elle International on sciences and technologies. I'm also an external collaborator for the Ministry of National Education of France.



Luc Julia

Innovator at heart, conceived, built and deployed complex digital media desktop products, scalable Mobile and Internet applications (500M+ users), worked on big data and distributed architectures. Built

and led large, multidisciplinary, multi-sites engineering and research teams. Interested in all kinds of technologies to improve human lives with a special twist for data fusion, home automation, wearable devices and the next generation of context-based Human-Computer Interactions.



Arnaud Latil

I am a lecturer at Sorbonne University in the field of law, working on the topics of creation and fundamental rights. I teach copyright, introduction to law and commercial law.

My current research focuses on intellectual property law and press law, especially in the context of new technologies and artificial intelligence.



Marcus Liwicki

I'm professor of machine learning at Luleå University of Technology. I specialize in pattern recognition with main focus on historical document analysis and OCR using deep neural networks.



Carlos E. Mejia

I am a research engineer in the LOCEAN laboratory where I work machine learning and environment. My interest covers especially neural architectures for the approximation of transfer functions, and all applications relevant to remote sensing.



Sylvie Thiria

I am an emeritus professor at Sorbonne University working in the field of climate science. My research interest at the LOCEAN laboratory focuses on neural modeling and its applications, particularly in geophysics.

CONTACT & REGISTRATION: scai@sorbonne-universite.fr

PROGRAMME

	COURSES, WORKSHOPS & LECTURES		INSTRUCTORS & GUESTS
MONDAY JULY 6	09h00	Welcome breakfast @ SCAI	G�rard Biau (Sorbonne University)
	10h00	Deep Learning and dynamic systems, between machine learning and numerical analysis (Lecture)	Patrick Gallinari (Sorbonne University)
	12h30	Lunch break	
	14h00	Reinforcement learning and Bayesian inference (Lecture & hands-on)	Kenji Doya (Okinawa Institute of Science and Technology)
	18h00	Guest lecture: There is no such thing as Artificial Intelligence	Luc Julia (Samsung)
TUESDAY JULY 7	09h30	Advanced neural networks for predictive oncology (Lecture & hands-on)	Olivier Cussenot (Sorbonne University & Paris Hospitals) St�phane Gazut (CEA)
	12h30	Lunch break	
	14h00	Computer vision & Autonomous driving (Lecture & hands-on)	Matthieu Cord (Sorbonne University & valeo.ai)
	18h00	Guest lecture: De l'autre c�t� de la machine. Voyage d'une scientifique au pays des algorithmes	Aur�lie Jean
WEDNESDAY JULY 8 @IRCAM	09h30	Probabilistic generative models for music and creative AI (Lecture & hands-on)	Philippe Esling (Sorbonne University & Ircam)
	12h30	Lunch break	
	16h00	Guest lecture	TBD
THURSDAY JULY 9	09h30	Unsupervised learning, climate issues & examples (Lecture & hands-on)	Sylvie Thiria (LOCEAN), Anastase Charantonis (ENSIEE), Carlos Mejia (LOCEAN)
	12h30	Lunch break - Poster session	
	14h00	Advanced neural networks for Cultural Heritage studies & historical OCR (Lecture & hands-on)	Marcus Liwicki (LTU, Sweden)
	18h00	Lecture on Law & Neural Networks	Arnaud Latil (Sorbonne University)
FRIDAY JULY 10	09h30	PROJECT	Philippe Esling (Ircam)
	12h30	Lunch break	
	14h00	PROJECT	Philippe Esling (Ircam)
	19h00	Farewell Cocktail Salle	