UNIVERSITÀ DEGLI STUDI FIRENZE

FLORENCE center for DATA SCIENCE

EIGHTH SEMINAR

D^2 SEMINAR SERIES

Florence Center for Data Science 'Double' Seminar Series

Florence Center for Data Science is happy to present the eighth seminar of the Series on **November 26th**, from **2 - 3.30 pm**

Click on the link below to register for the seminar (free of charge):
https://us02web.zoom.us/webinar/register/WN__m4iKOO3R6WBL4uVvT-v4A

SPEAKERS, TITLES, ABSTRACTS:

Giorgio Ricchiuti - Department of Economics and Management, University of Florence

Title: *State Space Model to Detect Cycles in Heterogeneous Agents Models (joint work with Filippo Gusella)*

Abstract: We propose an empirical test to depict possible endogenous cycles within Heterogeneous Agent Models (HAMs). We consider a 2-type HAM into a standard small-scale dynamic asset pricing framework. On the one hand, fundamentalists base their expectations on the deviation of fundamental value from market price expecting a convergence between them. On the other hand, chartists, subject to self-fulling moods, consider the level of past prices and relate it to the fundamental value acting as contrarians. These pricing strategies, by their nature, cannot be directly observed but can cause the response of the observed data. For this reason, we consider the agents' beliefs as unobserved state components from which, through a state space model formulation, the heterogeneity of fundamentalist-chartist trader cycles can be mathematically derived and empirically tested. The model is estimated using the S&P500 index, for the period 1990-2020 at different time scales, specifically, daily, monthly, and quarterly.

Marco Bertini - Department of Information Engineering, University of Florence

Title: *High quality video experience using deep neural networks*

Abstract: Lossy image and video compression algorithms are the enabling technology for a large variety of multimedia applications, reducing the bandwidth required for image transmission and video streaming. However, lossy image and video compression codecs decrease the perceived visual quality, eliminate higher frequency details and in certain cases add noise or small image structures. There are two main drawbacks of this phenomenon. First, images and videos appear much less pleasant to the human eye, reducing the quality of experience. Second, computer vision algorithms such as object detectors may be hindered and their performance reduced. Removing such artefacts means recovering the original image from a perturbed version of it. This means that one ideally should invert the compression process through a complicated non-linear image transformation. In this talk, I'll present our most recent works based on the GAN framework that allows us to produce images with photorealistic details from highly compressed inputs.