UNIVERSITÀ CATTOLICA
del Sacro Cuore

Dipartimento di Matematica per le Scienze economiche, finanziarie ed attuariali

Nell'ambito delle iniziative seminariali del Dipartimento, rivolte alla ricerca ed alla didattica avanzata,

mercoledì 20 novembre 2024, alle ore 12.30 presso l'Aula 200 – via Necchi 9

si svolgerà il **SEMINARIO**

« MACHINE LEARNING APPROACHES TO SUPPORT DECISION IN INSIDER TRADING DETECTION »

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Abstract: Identifying market abuse activity from data on investors' trading activity is very challenging both for the data volume and for the low signal to noise ratio. As part of the collaboration between Scuola Normale Superiore and CONSOB, and in order to support market surveillance aimed at identifying potential insider trading activities, we propose two unsupervised methodologies for contextual anomaly detection: clustering and dimensionality reduction based. The approach based on clustering combines two complementary methods. The first identifies, in the vicinity of a price sensitive event, discontinuities in the trading activity of an investor with respect to her own past trading history and to the present trading activity of her peers. The second method aims at identifying groups of investors that act coherently around price sensitive events, pointing to potential insider rings. On the other hand, the approach based on dimensionality reduction follows the reconstruction-based paradigm of anomaly detection in time series and its only input is the trading position of each investor active on the asset for which we have a price sensitive event. After determining reconstruction errors related to the trading profiles, several conditions are imposed in order to identify investors whose behavior could be suspicious of insider trading. As a case study, both the approaches are applied to investor resolved data of Italian stocks around takeover bids.

Link ai papers:

https://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-024-00500-2

https://arxiv.org/abs/2403.00707

Tutti gli interessati sono invitati a partecipare.