

Extracting visual content from YouTube trading videos

Supervisors: Ernest Valveny (UAB)

e-mail: ernest@cvc.uab.es

Research context

By February 2017, one billion hours of YouTube were watched every day, and by 2019, 500 hours of video were uploaded every minute. Online platforms, such as YouTube, have made it easier to access and learn about every type of content, including financial information.

The project aims to examine the role of YouTube as a relevant source of financial and stock recommendations. By posting their views and recommendations, YouTubers can directly influence the investment decisions of their followers, potentially altering capital market dynamics. For instance, they can unpack sophisticated financial information produced by formal intermediaries, such as financial analysts, and make it accessible to unsophisticated investors. However, the quality of their analysis and advice might be questionable.

In this project we aim at extracting and analyzing visual information from videos as a tool that can help to understand the type of stock market recommendations disseminated via YouTube and examine whether they can impact capital markets (for instance, by influencing the investment decisions of individual investors).

Extraction of visual content from YouTube videos

Analyzing the visual content and graphics of videos is a crucial to understanding different styles and recommendations. The main objective is to extract and analyze key visual elements from a pre-selected sample of YouTube videos. These videos focus on providing investment/stock information and can vary in nature; for example, they may: i) discuss stock recommendations for an individual company or multiple companies (i.e., buy, hold, sell); ii) Refer to investment strategies (i.e., “how to make money”); iii) Discuss market/financial trends.

The primary goal is to identify any visual features within these videos that could potentially influence viewers' (i.e., investors') perceptions and their subsequent investment decisions. This analysis may include (but is not limited to) the following dimensions:

- i) Identifying and categorizing any on-screen graphics, such as *charts*, *tables*, and other *visual aids* that are used in the video to convey financial information. This will involve a detailed recording of the frequency, duration, and complexity of these graphical elements.
- ii) Identifying and categorizing any *text overlays* and *visual aids* such as: company ticker symbols, stock prices, and key numbers presented in the video. The objective is to record and analyze the presence, size, placement, and duration of these text/numerical elements, as they are likely employed to highlight key information relevant to the stock recommendations.

- iii) Identifying the overall video structure by recognizing proportions/frequency of audio vs. text overlays vs. charts/graphs display or any of their combinations.
- iv) Extracting relevant data conveyed by visual/graphical elements of the video (figures, charts, tables, etc.) and analyzing the correspondence between this data and the audio message of the video .

The main extraction task can be complemented by a comparative analysis across different videos to identify recurring patterns or unique visual elements specific to certain YouTube channels or types of recommendations.