ZENPULSAR

Social Media Pulse Data Set
Crypto

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ZENPULSAR's Social Media Pulse for Crypto tracks and quantifies the impact of social media on crypto assets. This unique data set generates ALPHA providing a detailed analysis of activities of influencers, financial professionals, retail investors, and bots across Social Media platforms.

Social Media Pulse Data Set - Crypto

ZENPULSAR's data centric AI platform "PUMP" monitors in real time multiple social media networks to track activities related to financial and crypto assets and then analyses them. It detects emerging viral narratives likely to form trends and impact financial assets. PUMP clears out the noise of social media with unmatched speed and accuracy. It identifies viral narratives related to the assets you track, - early signals you can spot and act on before the crowds and everyone else.

Beyond financial services, ZENPULSAR's technology is leveraged by a variety of clients to manage critical events such as product launches, policy platform developments, reputation crisis management, and disinformation campaigns.

ZENPULSAR's Social Media Pulse for Crypto provides time series relevant to selected assets. The data is extracted from Twitter, Reddit, Seeking Alpha and Telegram.

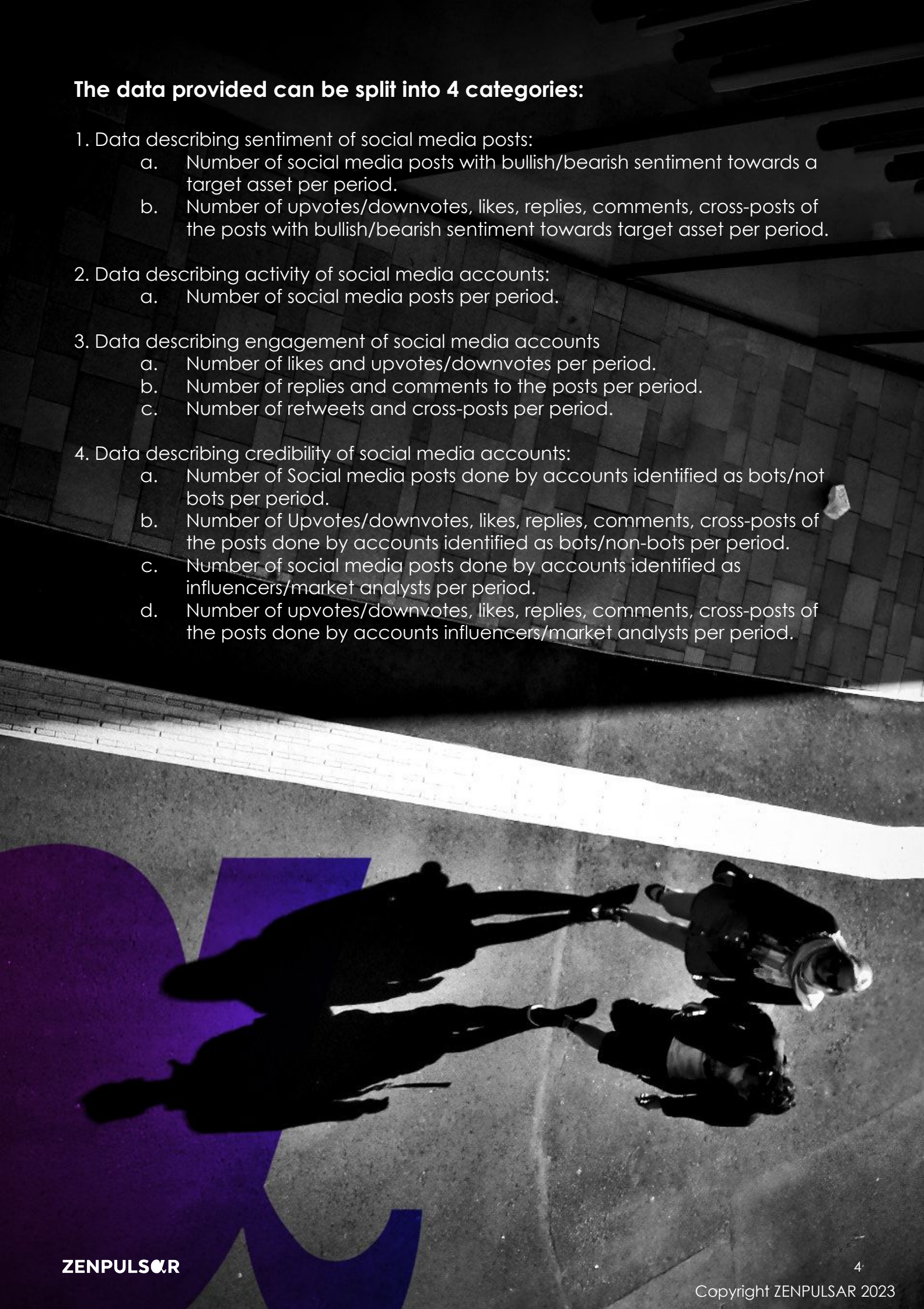
The data provided can be split into 4 categories:

1. Data describing sentiment of social media posts:
    a. Number of social media posts with bullish/bearish sentiment towards a target asset per period.
    b. Number of upvotes/downvotes, likes, replies, comments, cross-posts of the posts with bullish/bearish sentiment towards target asset per period.

2. Data describing activity of social media accounts:
    a. Number of social media posts per period.

3. Data describing engagement of social media accounts
    a. Number of likes and upvotes/downvotes per period.
    b. Number of replies and comments to the posts per period.
    c. Number of retweets and cross-posts per period.

4. Data describing credibility of social media accounts:
    a. Number of Social media posts done by accounts identified as bots/not bots per period.
    b. Number of Upvotes/downvotes, likes, replies, comments, cross-posts of the posts done by accounts identified as bots/non-bots per period.
    c. Number of social media posts done by accounts identified as influencers/market analysts per period.
    d. Number of upvotes/downvotes, likes, replies, comments, cross-posts of the posts done by accounts influencers/market analysts per period.



Data analytics methodology

Selection of asset-relevant social media posts:

This task is done via iterative usage of information retrieval methods such as keyword extraction and topic modelling (LDA, BERTopic, etc.). We extract the keywords for each asset that are commonly used by people. Because a person who wants to influence public opinion on an asset must provide a specific name for the target asset, such as relevant codes or common names, the keywords they choose will help us to identify them. Also, there are fine-tuned models to help us to determine the truth about the financial topics. By combining these methods and models, we can focus on the data to seek the alpha or identify critical events from different influencers.

Financial-related classification:

To filter the key samples from large amounts of posts and news, we employ state-of-the-art NLP models (Roberta-XLM) to achieve the best performance. There were already some pre-trained models focused on the news containing traditional assets such as bonds, FX, and stocks. By using weak-supervision learning and the additional internal data related to less traditional assets like crypto (added via such techniques as pseudo-labelling), our fine-tuned classifier can achieve great accuracy and precision. This is a binary classification to predict whether the post is related to finance or not.

Account classification

To classify an account as a bot or as an authentic user, we apply a combination of the following techniques:

- NLP-based content analysis - we employ transformer models like google MT5 or XLM-Roberta trained on bot post datasets.
- Heuristics-based features (speed of posting, statistical characteristics based on NER analysis results, etc). Those features are fed to the Support Vector machine classifier.
- The format of recent posts from the same user. Many bots have templates for different posts by putting the text together and transforming it. The model can extract features on it to improve the model.
- Analysis of network topology (bots have a different one from human accounts), specifically betweenness centrality characteristics of an account within an account network (Katz centrality, Pagerank).

To classify an account as an influencer, a market analyst, or an abnormal user, we apply a combination of the following techniques:

- NLP-based content analysis - transformer models like google MT5 or XLM-Roberta trained on influencer post datasets.
- Analysis of the account following network characteristics of an account, specifically betweenness centrality, within the account network (Katz centrality, Pagerank, Eigenvector centrality).
- Number of followers/reddit karma thresholds.

Sentiment detection:

We utilise transformer-based models (FinBert, CryptoBert and CryptoRoberta) fine tuned on our internal datasets. The model was trained on cryptocurrency and stock data collected from social media, and three classes will be output by the classifier, bearish, neutral, and bullish.

Asset Coverage

Major crypto assets covered with new assets added regularly.

Dataset attributes

Attribute	Type	Description	Example
asset_codes	list	list of tracked assets	BTC
account_types	list	types of accounts posted, reposted or commented a post (bot, influencer)	is_influencer
frequency	string	frequency of dataset (hourly, daily, monthly, yearly)	daily
sentiments	list	sentiment of the post or comment (bullish, bearish)	is_bullish
sources	list	social media network (Twitter, Reddit, Telegram, Seeking Alpha)	twitter
timeframe	str	timeframe of data set	1d
dataframe	str	date and time of datapoint	2023-01-02T00:00:00+00:00
timestamp	int	UNIX format of date and time of datapoint	1672617600
comments	int	number of comments	13521
likes	int	number likes	43848
posts	int	number of posts	47214
reposts	int	number of reposts	7941

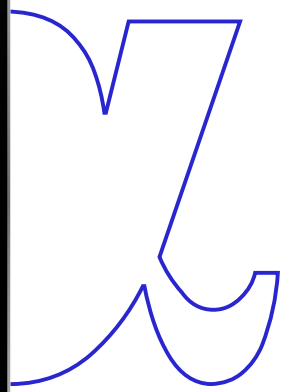
Example of output

Request: "query": { "asset_codes": [“BTC"],
"account_types": [“is_influencer"],
"frequency": "daily",

"sentiments": ["is_bullish",
"is_bearish“],

"sources": [
"reddit",
"seeking_alpha",
"telegram",
"twitter"],

"timeframe": "1m",
"meta": true}



dataframe	timestamp	comments	likes	posts	reposts
2023-01-02T00:00:00 +00:00	1672617600	13521	43848	47214	7941
2023-01-03T00:00:00 +00:00	1672704000	12738	42571	39726	9943
2023-01-04T00:00:00 +00:00	1672790400	3407	10691	14979	1469
2023-01-05T00:00:00 +00:00	1672876800	3841	9653	13587	2298
2023-01-06T00:00:00 +00:00	1672963200	3610	10359	13343	1439

Data quality

99 % of data consistency

Data volume

over than 0,5B data points

Country coverage

Worldwide

Delivery Format

JSON, CSV

Delivery Method

REST API, Swagger available

Delivery Frequency

Hourly, Daily, Weekly, Monthly

Use cases

- Sentiment Analysis
- Hedge Funds
- Asset Management
- Quantitative Investing
- Alpha Generation

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