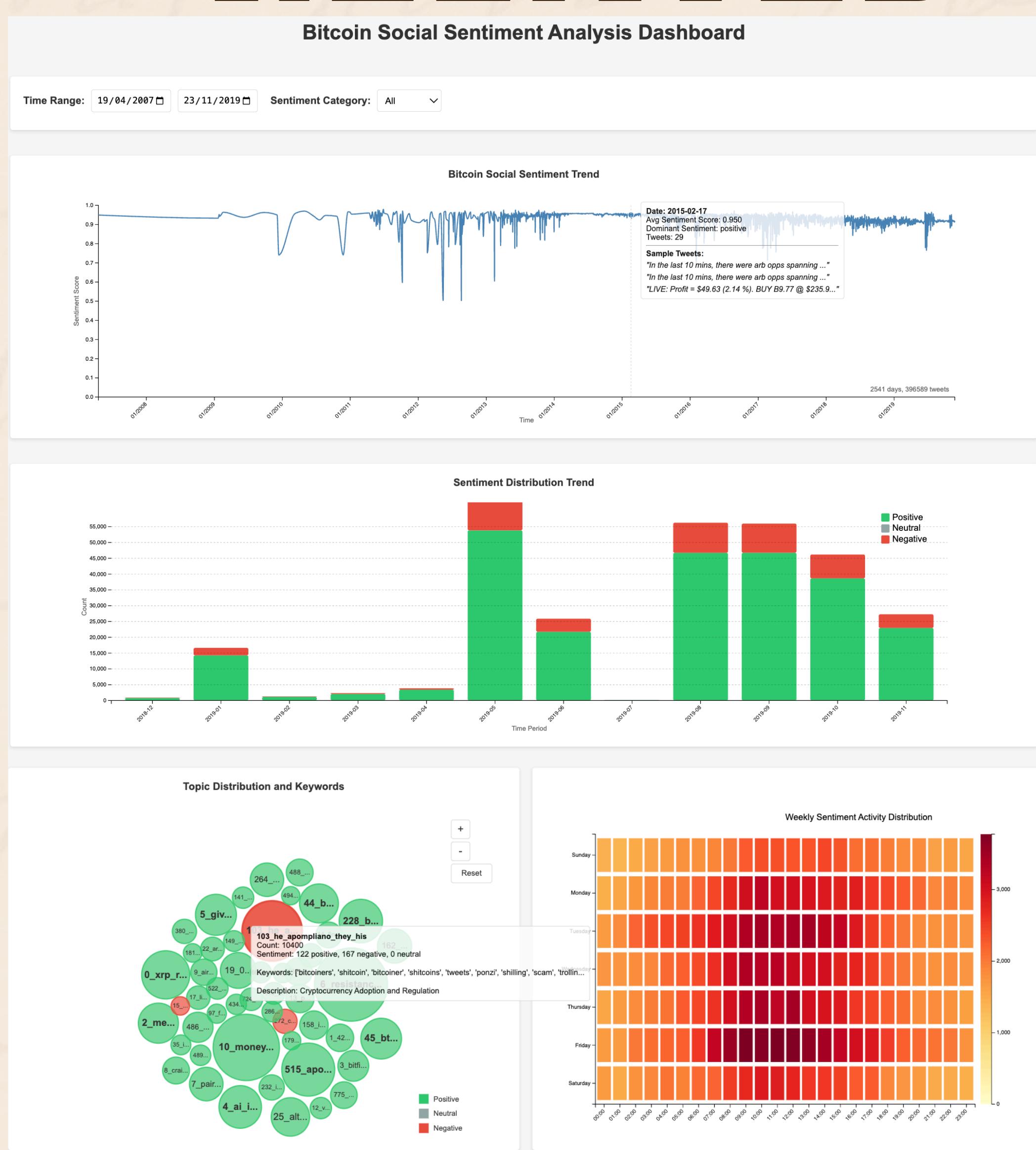


# SOCIAL ANALYTICS DASHBOARD FOR BITCOIN RELATED DISCUSSIONS



## Introduction & Problem Statement:

Bitcoin drives global financial discussions, especially on X (Twitter). Existing analytics often ignore text content, limiting sentiment insights. We propose a real-time dashboard using NLP and visualization to track Bitcoin sentiment and topics.

## Methodology:

### Dataset Collection:

- Kaggle's "Bitcoin Tweets (2016-2019)" dataset.
- Attributes: tweet text, timestamps, engagement metrics (likes, retweets).

### Data Processing:

- Removal of non-English tweets and irrelevant characters.

### Machine Learning Techniques:

- Sentiment Analysis:** Fine-tuned CryptoBERT model for accuracy with cryptocurrency language.
- Topic Modeling:** BERTopic for coherent topic extraction from tweet texts.

## Team members

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## Innovation:

### 1. Transformer-Based Topic Modeling:

- Uses BERTopic with BERT embeddings, surpassing traditional methods like LDA.
- Captures evolving emotional tones and topical trends dynamically

### 2. Multi-View Temporal Exploration of Sentiment:

- Interactive charts (rolling sentiment scores, heatmap, stacked sentiment volume).
- Users can link sentiment shifts directly to market events.

### 3. Interactive, Customizable Interface:

- User-friendly, dynamic design suitable for both technical and non-technical users.
- Enables detailed exploration through interactive filters and visualizations.

## Dashboard Integration:

- Four key visualizations: Sentiment line chart, topic distribution chart, sentiment heatmap, and sentiment area chart.
- Built with D3.js from initial Figma prototypes for dynamic web implementation.