

Mini Project

Sentiment Analysis using Text Abstraction for Cryptocurrency Trading

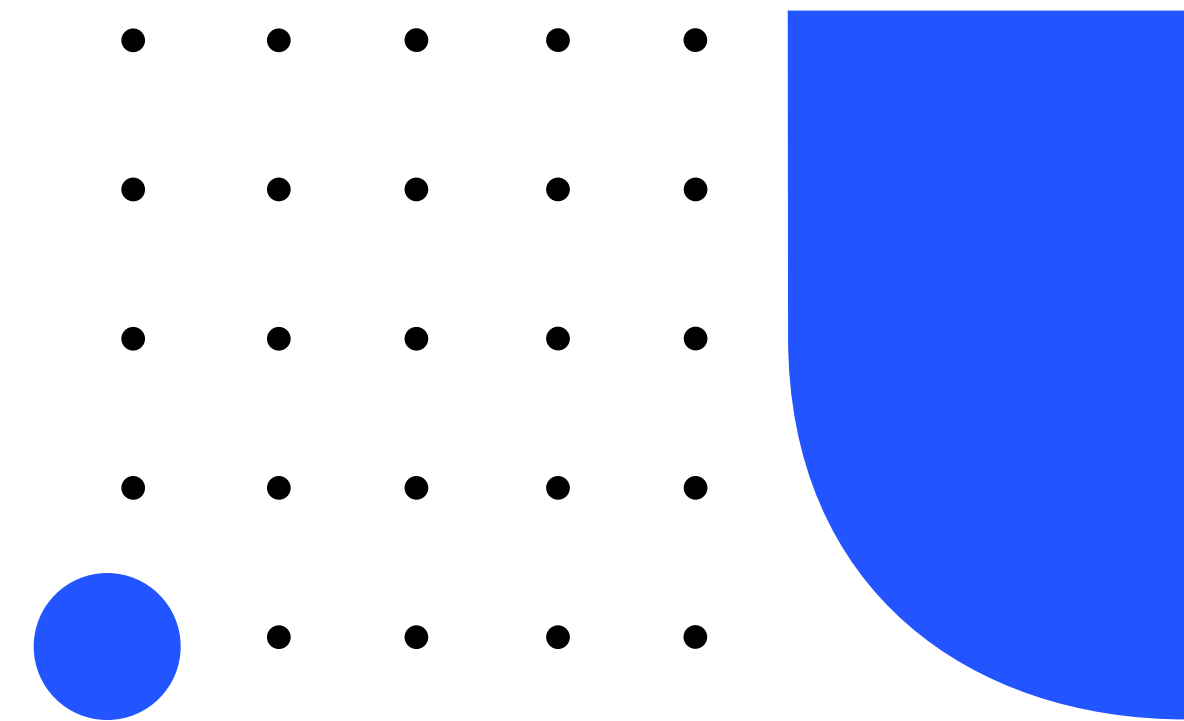
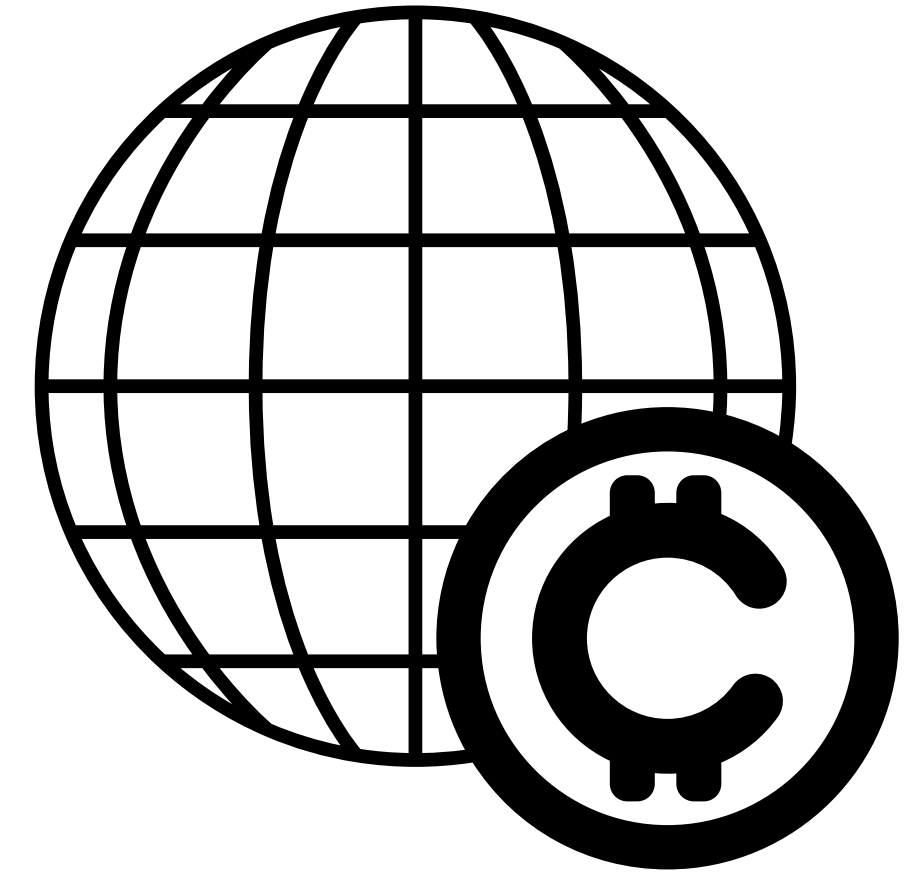
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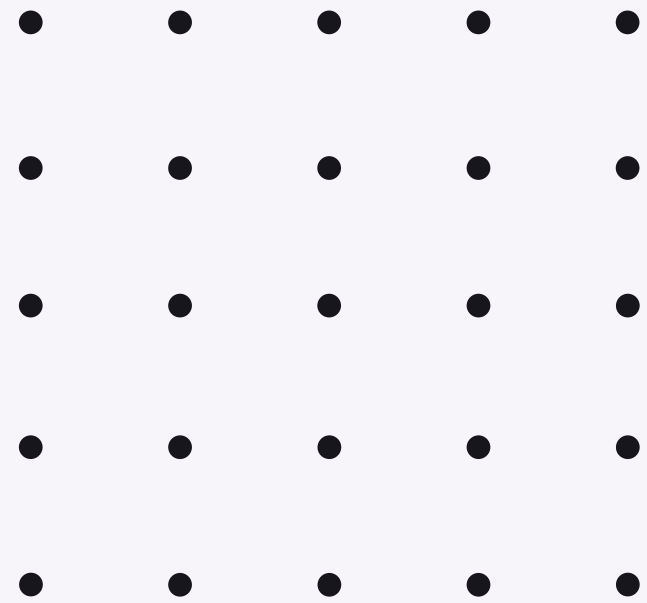
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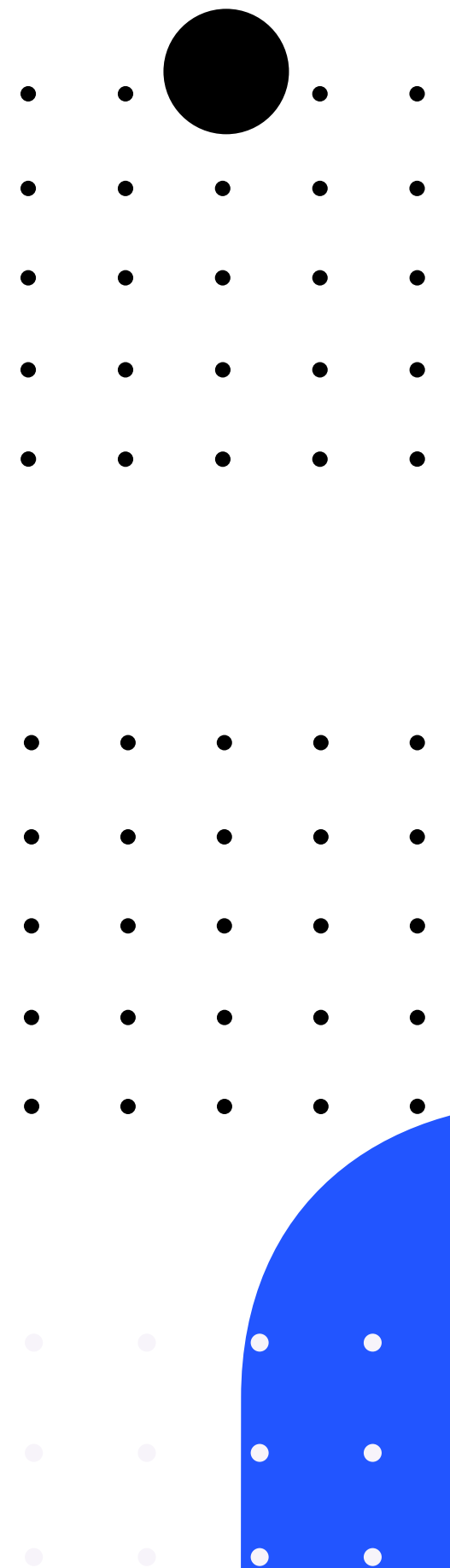
Agenda



- Problem Definition
- Objectives
- Literature Survey
- Design and Methodology
- Implementation Details
- Future Work
- Project Status
- References

Problem Definition:

As the cryptocurrency market continues to grow and gain popularity, understanding by sentiment analysis becomes crucial for investors, traders, and industry participants. Our project aims to provide suggestions to the users whether they should buy, sell or hold their share of cryptocurrencies. To do this we are using sentiment analysis with the help of text abstraction.



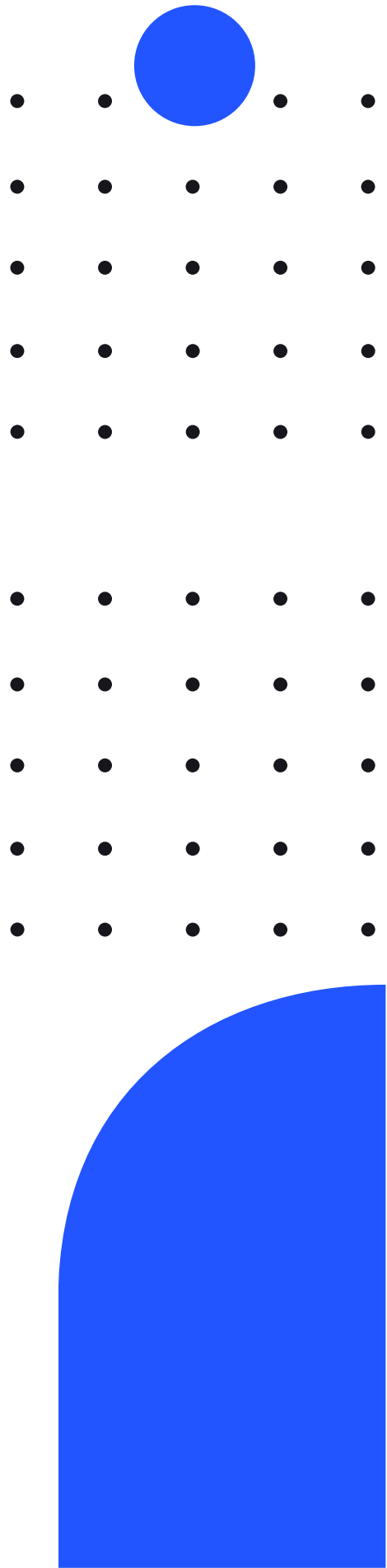


Objectives



- To give better solution that will be applicable for cryptocurrencies with the best possible accuracy.
- To develop a decision-making algorithm that can use the sentiment analysis results to provide buy, sell or hold recommendations to users.

Literature Survey

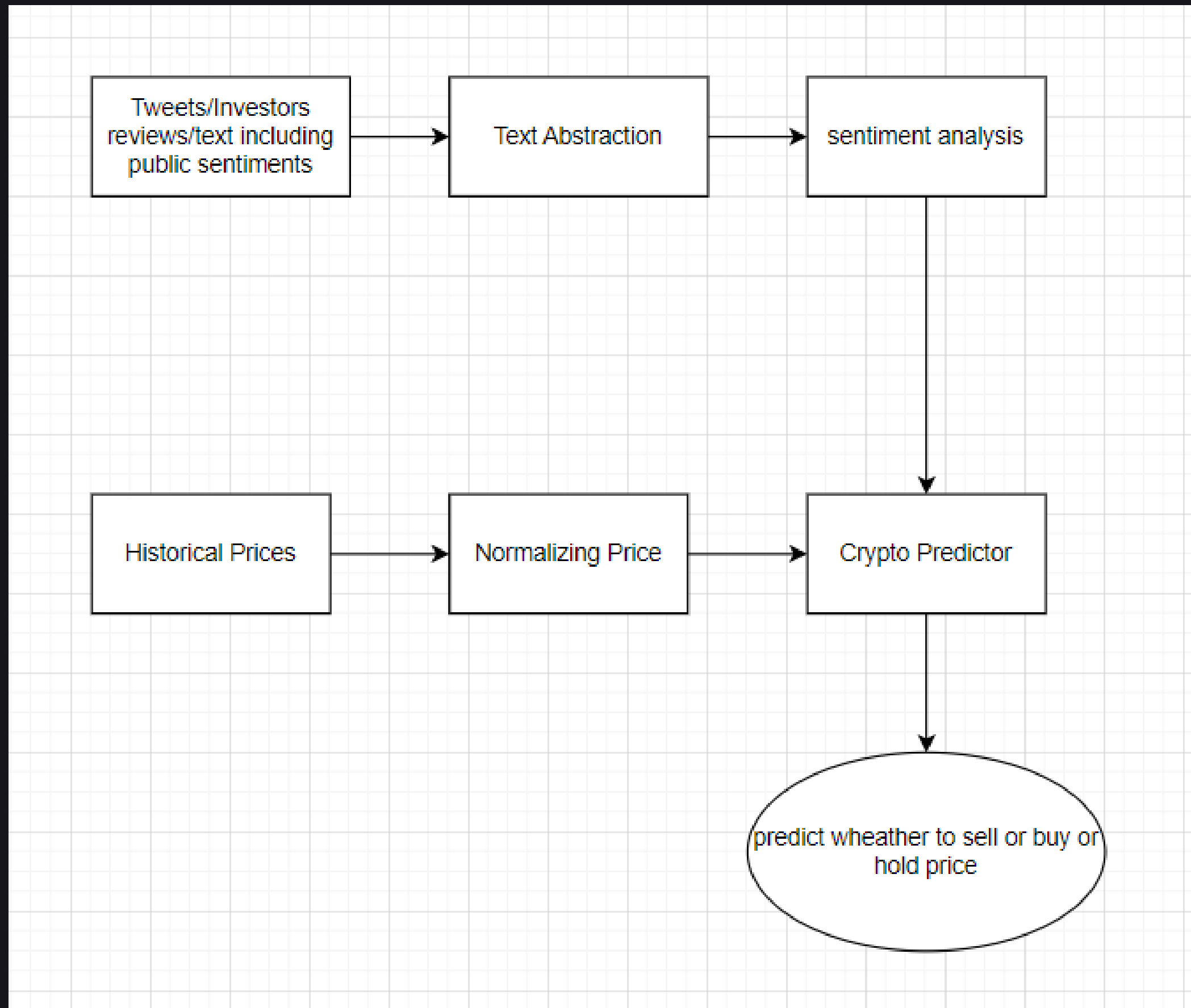


Title of research paper	Summary of the research paper	Research Gap in the paper/Future Scope/Suggested Changes
Sentiment Analysis and Emotion Detection on Cryptocurrency Related Tweets Using Ensemble LSTM-GRU Model	The proposed ensemble model achieves the highest performance for sentiment analysis, with LSTM-GRU outperforming all other models for both sentiment analysis and emotion detection.	intend to perform cryptocurrency market price prediction based on the analyzed sentiments in the future.
Tweet Sentiment Analysis for Cryptocurrencies	In this paper, Sentiment Analysis is done to determine whether tweets posted by people on Twitter influence the price of the altcoin NEO. Depending on the sentiment of the tweets, i.e. positive, negative and neutral, correlation is done with the prices of the cryptocurrency. Correlation is also done with respect to Bitcoin and Ethereum prices.	Just a Single cryptocurrency's analysis is done. We intend to implement our model for multiple cryptocurrencies. The accuracy of the model used here was 77%. We will improve the accuracy by using better models.
Deep Learning and Sentiment Analysis-Based Cryptocurrency Price Prediction	This paper proposes a fusion-based model for cryptocurrencies price prediction, i.e., DL-GuesS. It aims to predict the price of a specific coin considering their price history and tweet sentiments of the other dependent or alternate coins.	VADER model is used over here

Literature Survey

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•	•	•	•	•	Evaluating Sentiment Classifiers for Bitcoin Tweets in Price Prediction Task	Partial Correlation between Bitcoin price fluctuation and fluctuation of sentiment classes using different ML algorithms	Future study given as to incorporate other features from text abstraction as hashtags, twitter user, number of tweets and emoticons
•	•	•	•	•		MLP,WiSARD and decision tree methods have better correlation also use NGram data modelling and tweet embedding	
•	•	•	•	•			
•	•	•	•	•			
•	•	•	•	•			
					A Methodology for Securities and Cryptocurrency Trading using Exploratory Data Analysis and Artificial Intelligence	Larger focus on EDA and more practical losses. Use regression ANN model with reward loss introduced in this paper and multi-step ahead prediction will result in better performance for profit generation	

Proposed Model:



Implementation Details

- We have used the LSTM model for the training of data
- The following steps are implemented for the price prediction of the cryptocurrencies:

1. Preprocessing the Data
2. Splitting the Data
3. Training the LSTM Model
4. Evaluating the LSTM Model
5. Fine-tuning the LSTM Model
6. Making Predictions

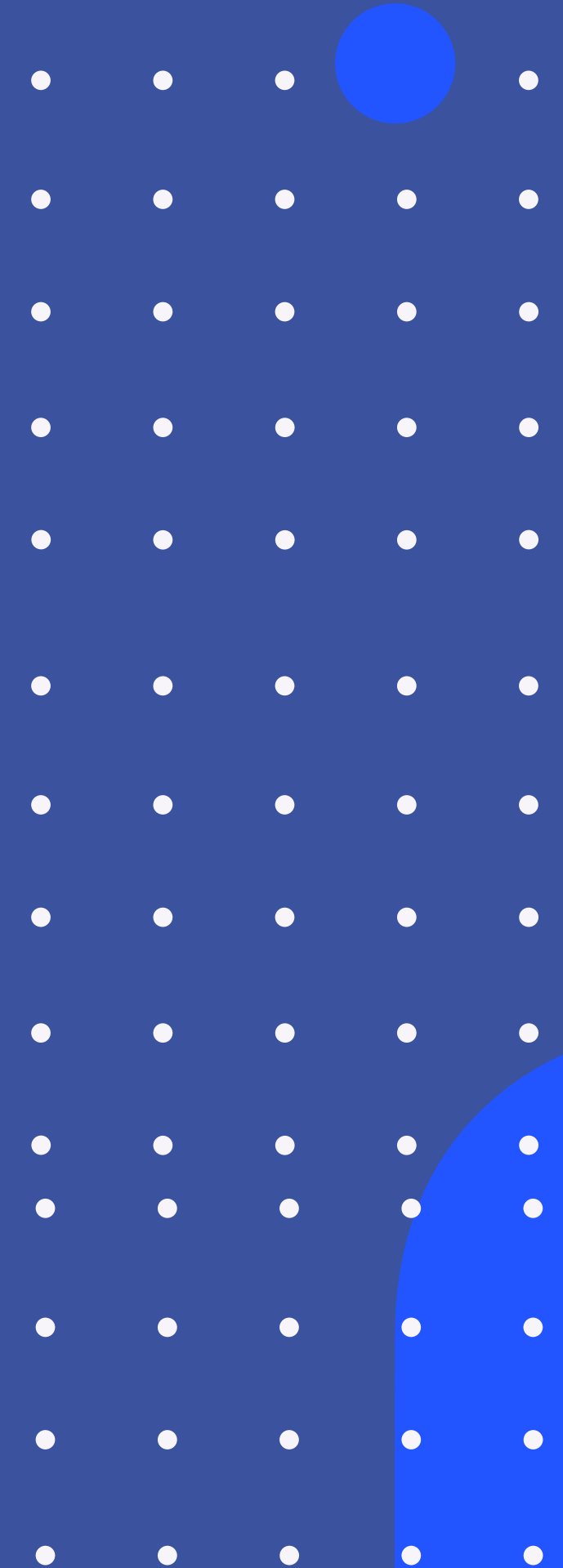
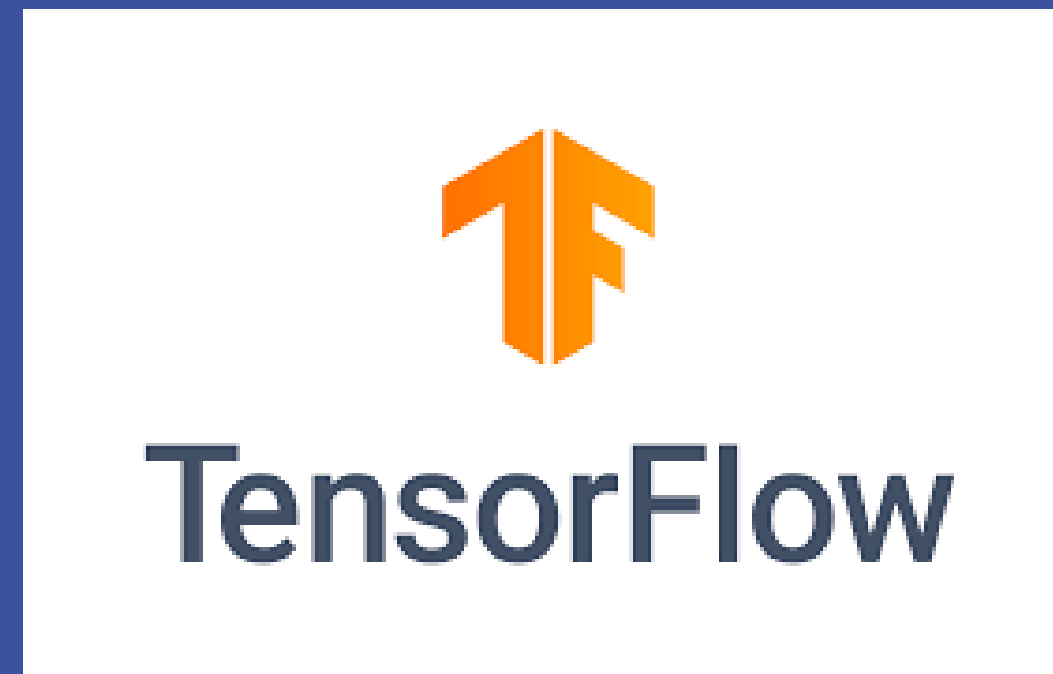
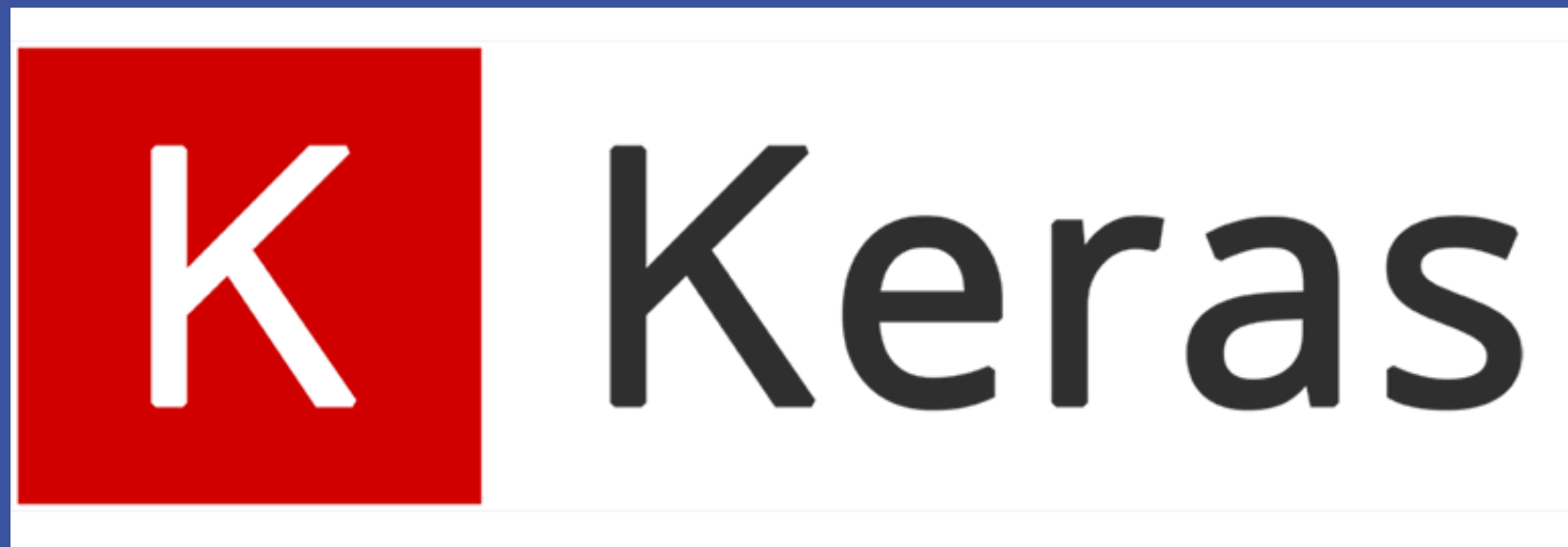


LSTM Algorithm

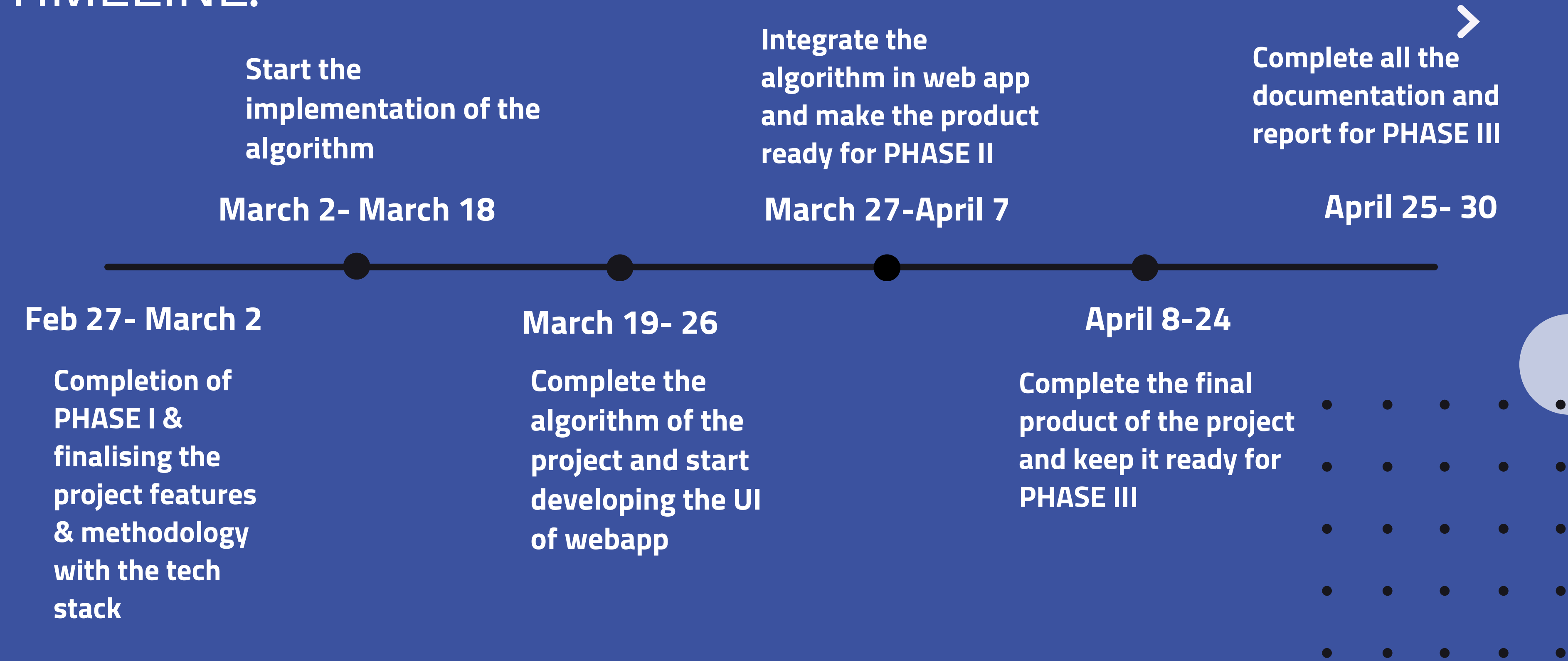
why LSTM ?

- LSTM (Long Short-Term Memory) is often preferred over other algorithms for crypto price prediction due to its ability to capture long-term dependencies and handle sequential data effectively.
- LSTM, with its ability to model non-linear relationships, can capture complex patterns and interactions between these factors, potentially leading to more accurate predictions compared to linear models.

Tech Stack



TIMELINE:



Project Status

- We have successfully implemented that users whether should buy, sell or hold their share of cryptocurrencies with best possible accuracy.

Future Scope

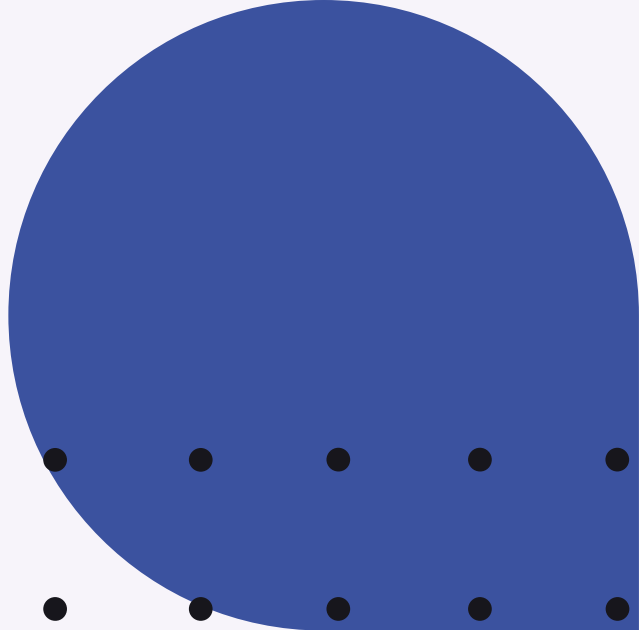
- In future, we will implement cryptocurrency sentiment analysis on multiple cryptocurrencies in Eternum, , Binanace

Reference

[1] E. Şaşmaz and F. B. Tek, "Tweet Sentiment Analysis for Cryptocurrencies," in Proceedings of the International Conference on Computer Science, Engineering, and Applications (ICCSEA), Ankara, Turkey, Oct. 13, 2021, pp. 1-6. doi: 10.1109/ICCSEA53611.2021.9558914.

[2] M. Wimalagunaratne and G. Poravi, "Deep Learning and Sentiment Analysis-Based Cryptocurrency Price Prediction," in Proceedings of the 8th International Conference on Intelligent Systems, Modelling and Simulation (ISMS), Kuala Lumpur, Malaysia, May 2018, pp. 96-101. doi: 10.1109/ISMS.2018.46.

[3] N. Aslam, F. Rustam, and E. Lee, "Sentiment Analysis and Emotion Detection on Cryptocurrency Related Tweets Using Ensemble LSTM-GRU Model," in Proceedings of the International Conference on Machine Learning, Big Data, and Business Intelligence (MLBDBI), Dubai, UAE, Mar. 19, 2022, pp. 23-28. doi: 10.1109/MLBDBI53631.2022.9751065.



Thank You