Chapter 16
Predicting Dogecoin Price Using Python Programming and AutoTS Algorithm

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ABSTRACT

It's crucial to thoroughly research the prior history of the cryptocurrency market, in this case Dogecoin, before considering investing in the financial market, especially the cryptocurrency market. The authors want to create a Python project that forecasts Dogecoin's price. To accomplish this, researchers need to gather all available data on Dogecoin's price history and use it to create mathematical formulas that will decide the currency's pricing. In order to help people grasp this data, the authors also create a chart to display it all.

INTRODUTION

Due to its extreme volatility and meme-based culture, Dogecoin attracted a lot of people's interest these last few years, which made Dogecoin a fascinating topic in financial analysis and speculation (Altıntaş, B. (2021) (Bouri, E. et al.,2020)(Guha, A. et. al., 2023). The desire to comprehend the variables that affect cryptocurrency pricing and make wise investing choices is another factor (Q. Li et. al.,2016). You could learn more about market factors that affect cryptocurrency prices, like as supply and demand, governmental changes, and investor attitude, by carrying out a Dogecoin price prediction project. The article specifically focuses on Dogecoin and talks about how important it is to look into history before investing in cryptocurrency markets (Cenkowski, S. et al., 2019) (Chen, J. et al.,2021)(J. Tan et. al., 2019). By collecting information and developing mathematical methods to determine the currency's pricing, it's suggested to develop a program in Python to forecast Dogecoin's price. To display this information, a chart is also developed (Chen, W. et al.,2018) (Chen, Y. et al.,2021)(N. Gradojevic, R. Gençay et. al.,2009). The article also includes descriptions of the algorithm, a flowchart, and the outcomes of the

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experiment (CNBC Television, 2021)(Jain, A. et. al., 2023)(X. Shi et. al.,2015). The algorithm involves installing and using AutoTS for time-series forecasting, importing libraries, setting Seaborn style, loading data into a pandas DataFrame, removing missing values, building a plot of DogeCoin prices over time, and generating and publishing the anticipated prices (R. Culkin et. al.,2017)(M. Malliaris et. al.,1993). The algorithm's steps are depicted in the flowchart. Results of the experiment include the opening, lowest, highest, and closing prices, adj. closing, and volume of the volume of the trade, price chart, and price prediction of Dogecoin (Diakonikolas, I. et al.,2021) (Digital Trends,2021)(Dangi, P. et. al., 2023).

DATA SET DESCRIPTION

- **Size:**24260
- **Python Code:**
  from pathlib import Path
  sz = Path("/DOGE-USD.csv").stat().st_size
  print(sz)
- **No. of col:** 7 & **No. of row:** 366
  # import module
  import pandas as pd
  # read the csv file
  results = pd.read_csv("/DOGE-USD.csv")
  # display dataset
  print(results)

Figure 1 shows Values of Dogecoin Price. Figure 2 shows Output Head Values of Dogecoin Price.

Figure 1. Values of Dogecoin price

	Date	Open	High	Low	Close	Adj Close	Volume
0	2022-04-05	0.148614	0.178045	0.147727	0.172907	0.172907	5230288678
1	2022-04-06	0.172485	0.173497	0.143291	0.143417	0.143417	3729047979
2	2022-04-07	0.143432	0.148028	0.141312	0.146102	0.146102	1420790611
3	2022-04-08	0.146106	0.152716	0.141608	0.142549	0.142549	1683800631
4	2022-04-09	0.142544	0.144462	0.141416	0.144303	0.144303	523997409
..	...	...	...	...	...	...	...
361	2023-04-01	0.077025	0.085279	0.076144	0.084051	0.084051	933070185
362	2023-04-02	0.081859	0.085279	0.077848	0.079089	0.079089	929778146
363	2023-04-03	0.079087	0.102640	0.076632	0.096079	0.096079	3497240136
364	2023-04-04	0.096083	0.102538	0.092871	0.095159	0.095159	3096545498
365	2023-04-05	0.094984	0.098416	0.093707	0.096959	0.096959	2360847360

[366 rows x 7 columns]

- **Input:** The price history of Dogecoin downloaded from Yahoo Finance
- **Expected Output:** Based on the given data, the expected output should be a table showing the following details for each date: