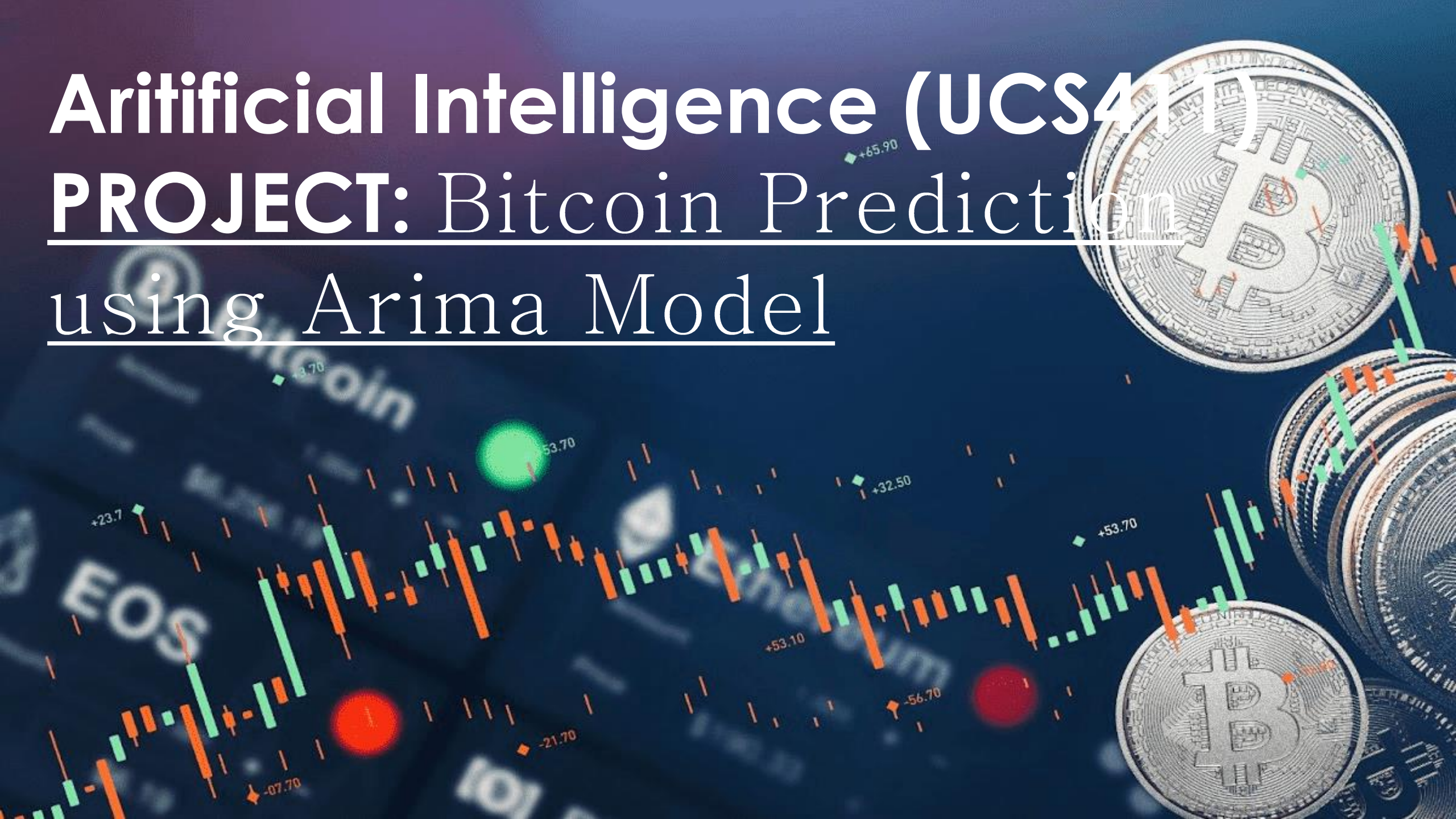
Aritificial Intelligence (UCS411)

PROJECT: Bitcoin Prediction using Arima Model



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Introduction

- The digital currency known as Bitcoin has drawn a lot of attention in recent years due to its decentralized nature and potential for huge returns on investment
- Accurately forecasting Bitcoin prices is now an important responsibility for investors, traders, and financial institutions as the cryptocurrency sector expands.
- The Autoregressive Integrated Moving Average (ARIMA) model is a widely used technique for time series forecasting in the financial markets
- A statistical model called ARIMA makes use of temporal connections seen in time series data to predict future values
- Use of ARIMA model in this AI research to forecast Bitcoin prices based on past price data.

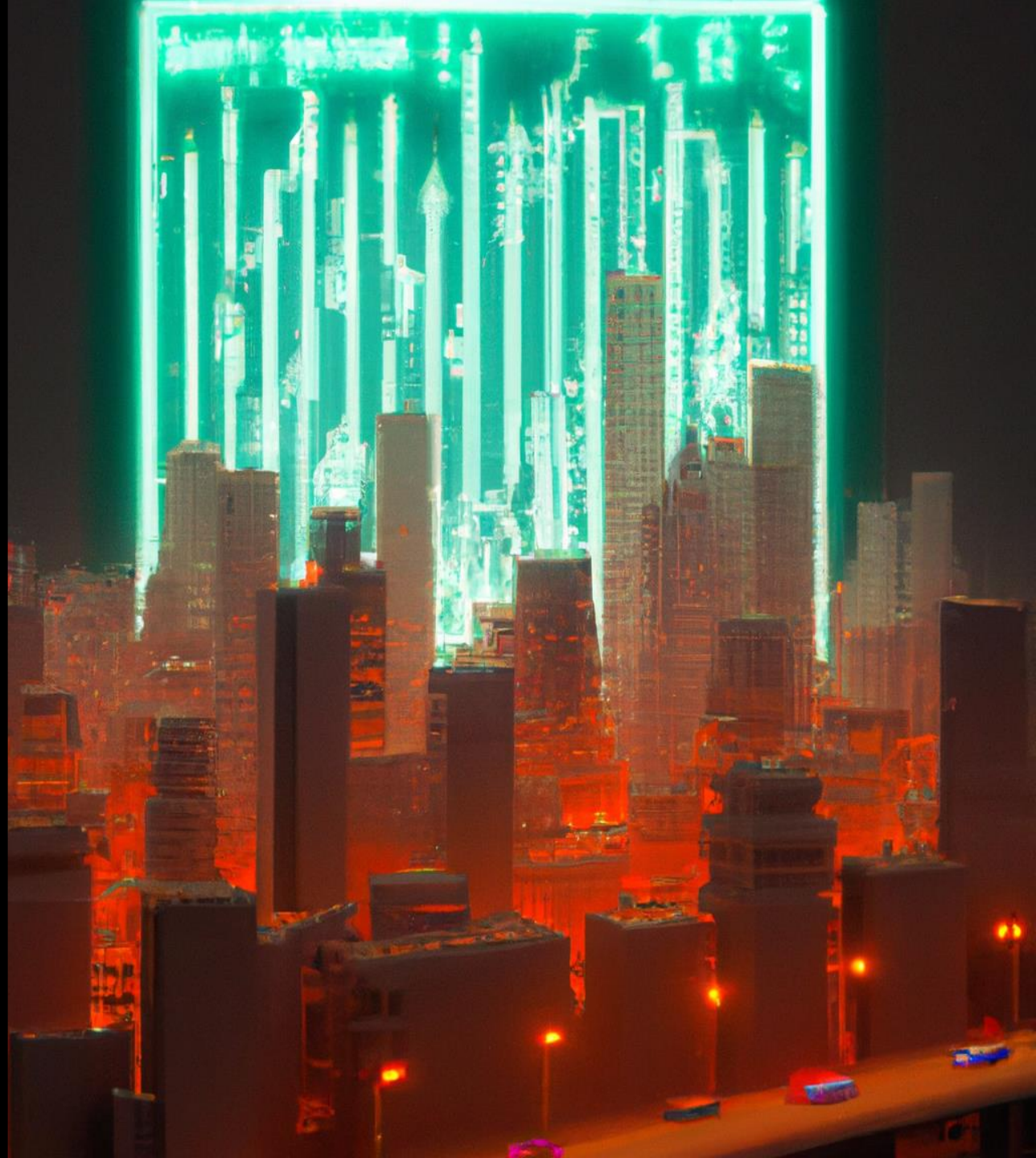
OBJECTIVES

- Creating Arima model: Using exploratory data analysis (EDA) and model evaluation techniques to implement to analyse historical Bitcoin data

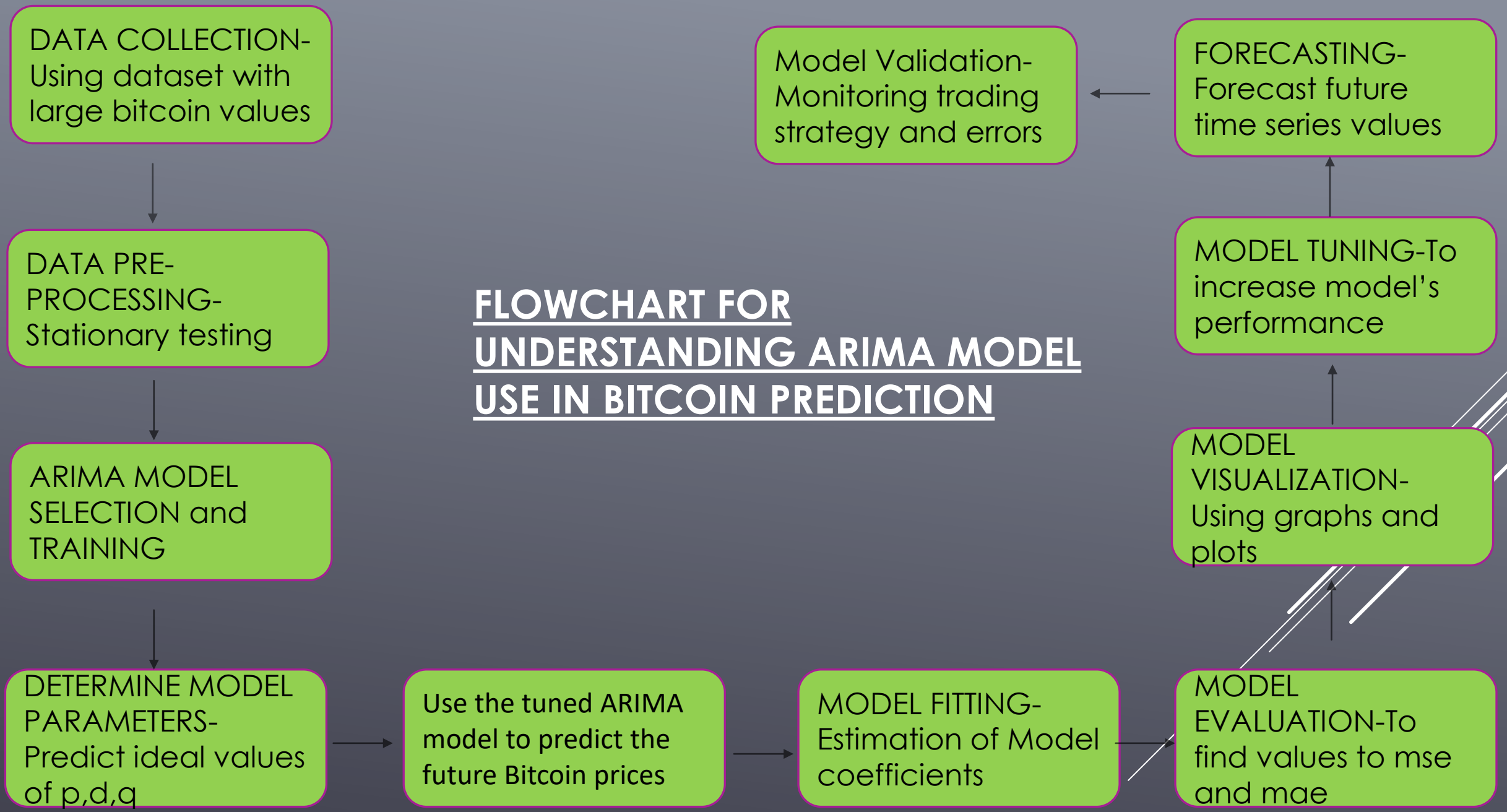
- Choosing the right parameters like the autoregressive order (p), integrated order (d), and moving average order (q)

- Using suitable evaluation metrics, such as root mean squared error (RMSE) , mean absolute percentage error, we assess the accuracy of our model (MAPE)

- Offering potential investors, traders, and financial institutions information and suggestions on how to apply the ARIMA model for Bitcoin price prediction and make wise choices in the cryptocurrency market.



FLOWCHART FOR UNDERSTANDING ARIMA MODEL USE IN BITCOIN PREDICTION



Applications

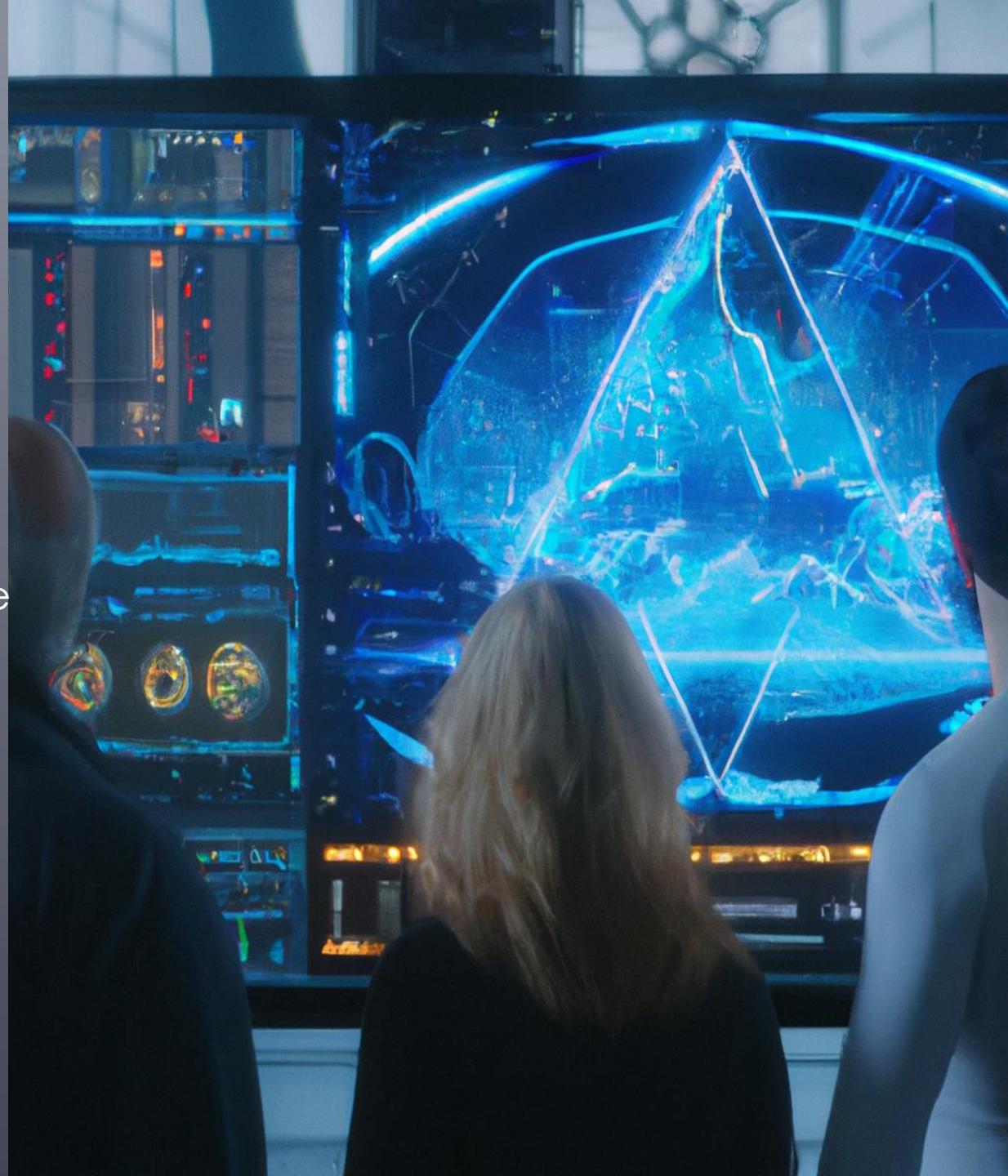
- Trading: Used by traders to forecast Bitcoin values in the future and help them decide whether to purchase or sell the commodity

- Investment:Investors can choose when to acquire or sell an item to maximise their returns by forecasting future Bitcoin prices

- Risk management:Traders can minimise their losses in the event of unanticipated price swings by taking the necessary action by forecasting future prices

- Research:The model can be used by researchers to examine how various factors, such as current events and market trends, affect the price of bitcoin

- Forecasting:Trading, investing, and research professionals may make informed decisions on the direction of the cryptocurrency market by forecasting future Bitcoin values



FUTURE SCOPES

- Forecasted Bitcoin Prices:The quality and quantity of the data utilised to train the model would determine how accurate the projections would be.
- Metrics for Evaluation : Number of measures, including mean square error (MSE), root mean square error (RMSE), mean absolute error (MAE), and correctness, may be used to assess the performance of the ARIMA model.
- Model Performance :The outcomes can include a performance analysis of the model, highlighting its advantages and disadvantages as well as any restrictions found throughout the project.
- Decision Making Insights :Inferences about the ARIMA model's potential usefulness for decisions relating to Bitcoin investments, trading, or risk management may be made based on forecasts and evaluation measures
- Future Work :To improve the accuracy of the forecasts, this can entail investigating different machine learning strategies, adding more data sources, or tweaking model parameters

Conclusion: The Future of Bitcoin Prediction using AI and ARIMA Model

- Significant advancement in the field of cryptocurrency prediction
- Combining the power of Artificial Intelligence and statistical analysis, we can create a more accurate and reliable prediction model that can help investors make informed decisions
- Incorporating advanced machine learning algorithms and deep neural networks to analyze vast amounts of data and identify complex patterns and relationships

REFERENCES

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THANK YOU

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