**CHAPTER I**

**INTRODUCTION**

1.1 Opening Section

This thesis aims to forecast the Ethereum price using machine-learning algorithms. Ethereum, as the second-largest cryptocurrency by market capitalization, has a volatile price and is influenced by various factors. Accurate price forecasting can aid investors, traders, and financial institutions in making informed decisions.

The specific research problem is to develop a model that can predict Ethereum price movements accurately. This involves exploring various machine learning techniques, identifying key features that affect Ethereum price, and analyzing the data for patterns and trends.

The research aims to create an Ethereum price-forecasting model that can provide accurate predictions, improve trading strategies, and reduce financial risks. The objectives include analyzing historical Ethereum price data, selecting suitable machine learning algorithms, optimizing model parameters, and evaluating model performance.

The introduction chapter will be structured as follows. Section 1 provides an overview of the thesis, including the research problem, aims, and objectives. Section 2 reviews the related literature on cryptocurrency price forecasting and machine learning techniques. Section 3 outlines the methodology used in this research. Section 4 presents the study's results, including the developed model's performance. Finally, Section 5 concludes the chapter by summarizing the main findings and outlining the rest of the thesis.

1.2 Background

Cryptocurrencies have gained significant attention in recent years due to their potential to disrupt traditional financial systems. Ethereum is a decentralized, open-source blockchain platform that enables the creation of decentralized applications and smart contracts. It was launched in 2015 and quickly became the second-largest cryptocurrency by market capitalization, behind Bitcoin.

Ethereum price has experienced significant volatility, with its value rising from around $1 in January 2016 to an all-time high of over $4,000 in May 2021, before dropping to around $2,500 in August 2021. The price fluctuations can be attributed to various factors, such as market sentiment, network congestion, regulatory changes, and technological advancements.

Accurate price forecasting is essential for investors and traders to make informed decisions and reduce financial risks. Machine learning algorithms have gained popularity in recent years as a powerful tool for predicting cryptocurrency prices. These algorithms can learn from historical price data and identify patterns and trends that can aid in predicting future price movements.

There have been several studies on cryptocurrency price forecasting using machine learning techniques, such as regression analysis, neural networks, and decision trees. However, most of these studies focus on Bitcoin, and few have examined Ethereum price forecasting.

This thesis aims to contribute to the field of cryptocurrency price forecasting by developing a model that can accurately predict Ethereum price movements using machine learning algorithms. The study will use historical Ethereum price data and analyze various factors that influence price movements, such as network activity, trading volumes, and market sentiment. By doing so, this research will provide insights into the factors that drive Ethereum price and improve trading strategies for investors and traders.