



**Bahria University**  
Discovering Knowledge

**FINAL YEAR PROJECT REPORT**  
**A MACHINE LEARNING APPROACH IN**  
**FINANCIAL MARKETS**

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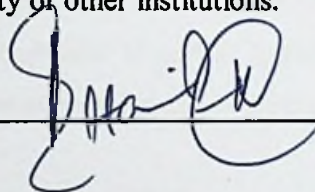
**BAHRIA UNIVERSITY (KARACHI CAMPUS)**

**2019**

**DECLARATION**

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

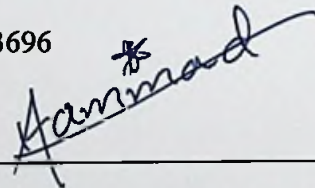
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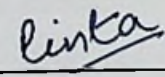
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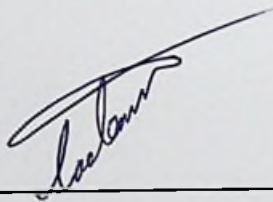
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**APPROVAL FOR SUBMISSION**

We certify that this project report entitled "A MACHINE LEARNING APPROACH IN FINANCIAL MARKETS" was prepared by HAMID KHAN, MUHAMMAD HAMMAD ALI & LINTA MATEEN has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Computer Sciences at Bahria University.

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## A MACHINE LEARNING APPROACH IN FINANCIAL MARKETS

### ABSTRACT

Financial market, a very vital and large sector of finance, includes a large number of investors, buyers and sellers. Financial market trends prediction has been a phenomenon since machine learning was discovered and introduced. But very few approaches became useful for forecasting the financial market as it changes with the passage of time. The objective of this project is to develop a software which can predict and forecast the financial market trends and stocks with the help of machine learning approach. Time Series approach has been used in our project in order to forecast the trend of the items. Time series have many models and we have to fit the appropriate model in order to forecast. Then, Seasonal & Trend Decomposition by Loess Forecasting (STLF) is used as it has been widely applied in monetary and financial sectors for its extraordinary and great efficiency for financial market prediction.

The STLF Model have two main components which is Trend & Seasonality. Trend means an increase or decrease in the quantity of data & Seasonality means any specific season or time of the year. This model works when the combination of trend and seasonality occurs. We got some accurate results through this model which is very helpful for the investors in order to invest money on those products which are in higher demand.

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