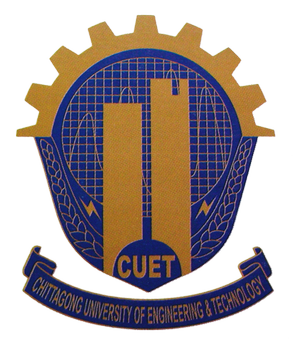
**Predicting Future Prices of Stock Market with Gated Recurrent Units (GRUs) Neural Networks**



This project is submitted in partial fulfillment of the requirement for the degree of

Bachelor of Science in Computer Science and Engineering.

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

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**CHITTAGONG – 4349, BANGLADESH**

The project titled “**Predicting Future Prices of Stock Market with Gated Recurrent Units (GRUs) Neural Networks**” submitted by ID 1304092, session 2016-2017 has been accepted as satisfactory in fulfillment of the requirement for the degree of Bachelor of Science in Computer Science and Engineering (CSE) as B.Sc. Engineering to be awarded by Chittagong University of Engineering and Technology (CUET).

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**Statement of Originality**

It is hereby declared that the contents of this project is original and any part of it has not been submitted elsewhere for the award if any degree or diploma.

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Signature of the Supervisor Signature of the Candidate

Date: Date:

**Acknowledgement**

First of all, I am grateful to the Almighty for giving me the strength for successful completion of this project. Then I would like to express my sincere gratitude to my honorable project supervisor Mohammad Obaidur Rahman, Assistant Professor, Department of Computer Science and Engineering, Chittagong University of Engineering and Technology, for his valuable advices, constructive suggestions and sincere guidance with all the necessary facilities for assimilation, research and preparation for the project. I place on record, my sincere gratitude to Dr. Md. Mokammel Haque, Associate Professor, Department of Computer Science and Engineering, Chittagong University of Engineering and Technology, for his kind encouragement and cooperation. I would like to thank my family for their constant love and support. Finally, I would like to take this opportunity to express my gratitude to one and all, who directly or indirectly, have lent their hand in this venture.

**Abstract**

Gated Recurrent Units (GRUs) neural networks are a state of the art technique for sequence learning. They are rarely applied to financial time series predictions, yet inherently suitable for this domain.

To extract the hidden patterns of stocks is very challenging due to the volatility of stock market. In this project we predicted the future prices of stock market using Gated Recurrent Units (GRUs) neural networks. We predicted the future prices successfully with a very good accuracy. The traditional recurrent neural networks have vanishing gradient problems. We overcome that problems by using Gated Recurrent Units (GRUs) neural networks. We also make some small changes inside our Gated Recurrent Units (GRUs) neural networks for more efficiency. We also remove the local minima problem of gradient descent and time complexity and others problem of stochastic gradient descent. We use mini-batch gradient descent which is a good trade-off between stochastic gradient descent and batch gradient descent. Thus we successfully completed our project.