

**SCHOOL OF COMPUTER SCIENCE AND APPLICATIONS**

A Project Report

On

Air Pollution Forecasting using LSTM and GRU

Submitted in partial fulfillment of the requirements for the award of the Degree of

Master of Computer Science

Submitted by

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R20SCS06

under the guidance of

Internal Guide

Dr. Hemant K. S.

July 2022

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# CERTIFICATE

The project work titled - **Air Pollution Forecasting using LSTM and GRU,** is beingcarried out under our guidance by **Davada Juned Aslam**, **R20SCS06** , a bonafide student of REVA University, and is submitting the project report in partial fulfillment, for the award of **MSc Computer Science** during the academic year **2021–22**. The project report has been approved, as it satisfies the academic requirements with respect to the Project Work prescribed for the aforementioned Degree.

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**Dr. S. Senthil**

**Professor and Director**

**External Examiner**

**Name of the Examiner with** **Affiliation** **Signature with Date**

1.

2.

**DECLARATION**

I, Mr. Davada Juned Aslam, pursuing my **MSc of Computer Science**, offered by School of Computer Science and Applications, REVA University, declare that this Project titled - “Air Pollution Forecasting using LSTM and GRU” , is the result of the Project Work done by me under the supervision of Dr. Hemanth K. S. (Associate Professor).

I am submitting this Project Work in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications by REVA University, Bengaluru, during the Academic Year 2021-22.

I further declare that this Project Report or any part of it has not been submitted for the award of any other Degree / Diploma of this University or any other University/ Institution.

*(Signature of the candidate)*

*Signed by me on:*

*Certified that this project work submitted by Davada Juned Aslam has been carried out under our guidance and the declaration made by the candidate is true to the best of my knowledge.*

*Signature of Internal Guide*

*Date :………..*

*Signature of Director of the School*

*Date :………..*

*Official Seal of the School*

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# 

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**ABSTRACT**

With the development of the industry in the last few years. We are facing an issue related to air quality. We are not getting the proper air quality because of the pollution out there in the environment due to harmful gases from the industry. It will affect human health and it can cause a serious issues related to the lungs. Air pollution can cause by different ways in today's world like the CO2 released from the car and some harmful chemicals which are released in the air by the industry. Air pollution can spread with the flow of air means wind direction and speed. To overcome this real-time problem there is much research going on nowadays that can forecast air pollution but it required a lot of computational power. Our approach in this research is that we are going to forecast air pollution using the very famous deep learning technique Recurrent Neural Networks (RNN) based framework with special structure memory cell known as Long Short-term memory (LSTM) and Gated Recurrent Unit (GRU). We can easily forecast air pollution using this easily by just providing some last day’s data to the model. It will forecast the next 24 hours of data by just providing the last 15 days of air pollution of data**.**

**TABLE OF CONTENTS**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **CHAPTERS** | **PAGE NO** |
| **1.** | **INTRODUCTION** | **1** |
| 1.1 INTRODUCTION TO PROJECT |
| - SOFTWARE AND HARDWARE SPECIFICATION |
| **2.** | **LITERATURE SURVEY** | **4** |
| **3.** | **SYSTEM ANALYSIS** | **8** |
| 3.1 EXISTING SYSTEM |
| 3.2 LIMITATIONS OF THE EXISTING SYSTEM |
| 3.3 PROPOSED SYSTEM |
| 3.4 ADVANTAGES OF THE PROPOSED SYSTEM |
| **4**. | **DATASET** | **10** |
| **5.** | **SYSTEM DEVELOPMENT STRATEGY** | **21** |
| 4.1 METHODOLOGY |
| 4.2 IMPLEMENTATION |
| **6.** | **SYSTEM DESIGN** | **46** |
| 5.1 HIGH LEVEL DESIGN (ARCHITECTURAL) |
| **7.** | **RESULT** | **47** |
| **8.** | **CONCLUSION AND SCOPE FOR FUTURE ENCHANCEMENT** | **53** |
| **9.** | **BIBILOGRAPHY** | **54** |

**IMAGE INDEX**

|  |  |  |
| --- | --- | --- |
| **IMG No.** | **CAPTION** | **PAGE NO** |
| 1.1 | Represent the number of death cause by different diseases in the world | 2 |
| 4.1 | Data Visualization for Pollution column | 11 |
| 4.2 | Data Visualization for Dew column | 12 |
| 4.3 | Data Visualization for temp column | 14 |
| 4.4 | Data Visualization for Press column | 15 |
| 4.5 | Data Visualization for Wnd\_spd column | 17 |
| 4.6 | Data Visualization for Snow column | 18 |
| 4.7 | Data Visualization for Rain column | 19 |
| 4.8 | Sample data for the dataset | 20 |
| 5.1.1 | The LSTM architecture | 23 |
| 5.1.2 | The Forget Gate for the LSTM | 25 |
| 5.1.3 | Showing the range of sigmoid activation function (0-1) | 26 |
| 5.1.4 | The Input gate of the LSTM | 27 |
| 5.1.5 | Comparing the range of activation function and sigmoid activation function | 28 |
| 5.1.6 | Output Gate for the LSTM architecture | 29 |
| 5.1.7 | The GRU architecture | 30 |
| 5.1.8 | Update gate for the GRU | 31 |
| 5.1.9 | Forget gate for the GRU | 32 |
| 5.2.1 | Represent of data variable from dataset | 34 |
| 5.2.2 | Dataset before normalizing data | 37 |
| 5.2.3 | Data visualization for the Air Pollution on the hourly basis for the last 15 days which is 360 hours of data | 38 |
| 5.2.4 | Heat map for the co-relation of data of the dataset | 39 |
| 5.2.5 | The dataset visualization after normalizing the data | 40 |
| 5.2.6 | The Normalized data for the prediction variable pollution | 41 |
| 7.1 | The graph for the 300 epoch values for the GRU with 50 neurons | 47 |
| 7.2 | The forecasting of data for the next 24 hours data based on the data what we have provided for 50 neurons | 48 |
| 7.3 | The graph of 100 and 200 epoch values for the 50 neurons for the GRU | 48 |
| 7.4 | The graph for the both the model with 100 and 200 epoch values. | 49 |
| 7.5 | The train and test validation data for the model with 50 neurons and 300 epochs | 50 |
| 7.6 | The output graph for the next 24 hours of data for the 50 neurons | 51 |
| 7.7 | The training graph for the 100 and 200 epochs with 50 neurons | 51 |
| 7.8 | The output prediction graph for the actual and predicted values | 52 |

**TABLE INDEX**

|  |  |  |
| --- | --- | --- |
| **TAB No.** | **CAPTION** | **PAGE NO** |
| 4.1 | Range of data and count for the Pollution Column | 10 |
| 4.2 | Min, Max, Average, SD for the Pollution Column | 11 |
| 4.3 | Range of data and count for the Dew Column | 11 |
| 4.4 | Min, Max, Average, SD for the Dew Column | 12 |
| 4.5 | Range of data and count for the Temp Column | 13 |
| 4.6 | Min, Max, Average, SD for the Temp Column | 13 |
| 4.7 | Range of data and count for the Press Column | 14 |
| 4.8 | Min, Max, Average, SD for the Press Column | 15 |
| 4.9 | Range of data and count for the Wind direction Column | 16 |
| 4.10 | Range of data and count for the Wnd\_spd Column | 16 |
| 4.11 | Min, Max, Average, SD for the Wnd\_spd Column | 17 |
| 4.12 | Range of data and count for the Snow Column | 18 |
| 4.13 | Min, Max, Average, SD for the Snow Column | 18 |
| 4.14 | Range of data and count for the Rain Column | 19 |
| 4.15 | Min, Max, Average, SD for the Rain Column | 19 |
| 5.2.1 | Model Architecture for GRU | 42 |
| 5.2.2 | Model Architecture for LSTM | 43 |