Project Phase-2 (19CS703) Report

on

## Emotion Recognition By Inclusion of Age And Gender Parameter By Deep Learning

#### *Submitted to*

**NMAM INSTITUTE OF TECHNOLOGY, NITTE**

(An Autonomous Institution under VTU, Belagavi)

*In partial fulfillment of the requirements for the award of the*

Degree of Bachelor of Engineering

in

Computer Science and Engineering

#### *by*

**ADITHYA HOLLA K 4NM19CS007**

**ADITYA MURUGAN 4NM19CS010**

**AKIL RAIF 4NM19CS014**

**ASHWAMED AROTE 4NM19CS031**

Under the guidance of

**Dr./Prof/Mr./Ms. Full Name,**

**Professor/Assoc. Professor/Asst. Professor**

Dept. of CSE, NMAMIT, NITTE



CERTIFICATE

Certified that the project work entitled **“Emotion Recognition By Inclusion of Age And Gender Parameter By Deep Learning ”**is a bonafide work carried out by **Adithya Holla K (4NM19CS007) , Aditya Murugan (4NM19CS010) , Akil Raif (4NM19CS014) , Ashwamedh Arote(4NM19CS031)** in partial fulfillment for the award of Degree of Bachelor of Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi during the year 2022-2023.It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project Phase- 2(19CS703) prescribed for the said Degree.

**Name & Signature of Guide Signature of HOD** **Signature of the Principal**

Ms. Joylin Priya Pinto

Assistant Professor GD-1

**External Viva**

**Name of the Examiners** **Signature with Date**

*1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**ACKNOWLEDGEMENT**

The satisfaction that accompanies the completion of any task would be incomplete without the mention of all the people, without whom this endeavour would have been a difficult one to achieve. Their constant blessings, encouragement, guidance and suggestions have been a constant source of inspiration

First and foremost, my gratitude to my project guide, .. ***name of the guide...*** for his constant guidance throughout the course of this project Phase-1 and for the valuable suggestions.

I also take this opportunity to express a deep sense of gratitude to the project coordinators for their valuable guidance and support.

I acknowledge the support and valuable inputs given by,**Dr. Uday Kumar Reddy** the Head of the Department, Computer Science and Engineering, NMAMIT, Nitte.

My sincere thanks to our beloved principal, **Dr. Niranjan N Chiplunkar**for permitting us to carry out this project at our college and providing us with all needed facilities.

Finally, thanks tostaff members of the Department of Computer Science and Engineering and our friends for their honest opinions and suggestions throughout the course of our project Phase-1.

Name of student1 (USN)

Name of student2(USN)

Name of student3 (USN)

**ABSTRACT**

****

Most companies like to predict the future sales. A good forecasting can prevent them from over-estimating or under-estimating the future sales which may leads to a great loss for the companies. With reliable sales prediction, companies could allocate their resources more wisely and make better profits. But sales forecasting is rather complicated because of numerous internal and external factors from the surrounding environment**.** Hence in the present market there is a need to call for the development of an intelligent forecasting system which is fast, versatile and can achieve a reasonably high accuracy**.** We aim to apply different machine learning techniques to build and tune a sales forecasting model and make predictions on sales data to meet this requirement. We also intend to provide a simple to use solution with various visualization tools for the ease of users.

III

**CONTENT**

|  |  |  |
| --- | --- | --- |
| **CHAPTER NO.** | **CHAPTER NAME** | **PAGE NO.** |
| **1** | **INTRODUCTION** | **1-3** |
| **2** | **LITERATURE SURVEY** | **5-9** |
| **3** | **PROBLEM DEFINITION** | **10** |
| **4** | **SYSTEM REQUIREMENTS SPECIFICATION** | **11** |
| **5** | **SYSTEM DESIGN** | **12** |
| **6** | **IMPLEMENTATION(optional)** | **13** |
| **7** | **RESULTS AND DISCUSSION(optional)** | **14** |
| **8** | **CONCLUSIONS** | **15** |
|  | **REFERENCES** |  |

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| **Figure no.** | **Description** | **Page No.** |
| 1 | CUDA programming with GPU | 3 |
| 2 | CPU-GPU program flow | 11 |

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **Table no.** | **Description** | **Page No.** |
| 1 | Results of CPU-GPU merge sort compared with GPU merge sort. | 12 |

*(chapter titles need to be changed according to your project)*

**CHAPTER 1**

**INTRODUCTION**

**CHAPTER 2**

**LITERATURE SURVEY**

**CHAPTER 3**

**PROBLEM DEFINITION**

**CHAPTER 4**

**SYSTEM REQUIREMENTS SPECIFICATION**

**CHAPTER 5**

**SYSTEM DESIGN**

**CHAPTER 6**

**IMPLEMENTATION**

**CHAPTER 7**

**RESULTS AND DISCUSSION**

**CHAPTER 8**

**CONCLUSIONS**

**References**

B. Huang, J. Gao and X. Li, “*An Empirically Optimized Radix Sort for GPU*,” IEEE International Symposium on Parallel and Distributed Processing with Applications., pp.234-241, 2009.

N. Faujdar andS. Saraswat, “*A Roadmap of Parallel Sorting Algorithms using GPU Computing,*” International Conference on Computing, Communication and Automation., pp.736-741, 2017.

X. Liu et al., “*RadixBoost:A Hardware Acceleration Structure for*

*Scalable Radix Sort on Graphic Processors*,” IEEE International Symposium on Circuits and Systems (ISCAS)., pp.1174-1177, 2015.

[X. Liu](https://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.Xingyu%20Liu.QT.&newsearch=true) and Y. Deng., “*FastRadix: A Scalable Hardware Accelerator for Parallel Radix Sort*,”12th International Conference on Frontiers of Information Technology., pp.214-219, 2014.

A. Vinay Kumar S and A. Arya., “*Fastbit-radix sort: Optimized version of radix sort*,” 11th International Conference on Computer Engineering & Systems., pp.305–312, 2016.

B. A. Valerievich et al., “The implementation on CUDA platform parallel algorithms sort the data,” 6th Mediterranean Conference on Embedded Computing (MECO)., pp.1-4, 2017.

D. I. Arkhipov et al., “*Sorting with GPUs: A Survey*,” arXiv:1709.02520., 8 Sep 2017.

D. Cederman and P. Tsigas., “*On sorting and load balancing on GPUs*,” ACM SIGARCH Computer Architecture News Vol. 36 Issue 5, pp.11-18, Dec. 2008.

A. Davidson et al., “*Efficient parallel merge sort for fixed and variable length keys*,” Innovative Parallel Computing (InPar)., pp.1-9, May 2012.

X. Ye., “High performance comparison-based sorting algorithm on many-core GPUs,” IEEE International Symposium on Parallel & Distributed Processing (IPDPS)., pp.1-10, April 2010.

S. Kumari and Dhirendra Pratap Singh., “*A parallel selection sorting algorithm on GPUs using binary search*,” International Conference on Advances in Engineering & Technology Research (ICAETR - 2014)., pp.1–6, Aug. 2014.

A. Deshpande and P. J. Narayanan., “*Can GPUs sort strings efficiently?*,” 20th Annual International Conference on High Performance Computing., pp. 305-313, Dec. 2013.

K. Thouti and S.R.Sathe., “An OpenCL Method of Parallel Sorting Algorithms for GPU Architecture,” International Journal of Experimental Algorithms (IJEA)., Vol. 3, 2012.

[K. Zhang](https://ieeexplore.ieee.org/search/searchresult.jsp?searchWithin=%22Authors%22:.QT.Keliang%20Zhang.QT.&newsearch=true) et al., “*GPU Accelerate Parallel Odd-Even Merge Sort: An OpenCL Method*,” 15th International Conference on Computer Supported Cooperative Work in Design (CSCWD)., pp.76–83, June 2011.

Y. Ye et al., “*GPUMemSort: A High-Performance Graphics Co-Processors Sorting Algorithm for Large Scale In-Memory Data*,” GSTF international journal on computing., vol. 1, pp.23-28, february 2011.

H. Peters, O. Schulz-Hildebrandt and N. Luttenberger., “*Parallel external sorting for CUDA-enabled GPUs with load balancing and low transfer overhead*,” IEEE International Symposium on Parallel & Distributed Processing, Workshops and Phd Forum (IPDPSW)., pp.1-8, April 2010

E. Sintorn and U. Assarsson., “Fast parallel GPU-sorting using a hybrid algorithm,” J. Parallel Distrib. Comput. 68., pp.1381–1388 2008.

D. Cederman and P. Tsigas., "*GPU-Quicksort: A practical Quicksort algorithm for graphics processors*," J. Exp. Algorithmics vol. 14 pp. 4:1.4-4:1.24 Jan. 2010.

F. G. Khan et al., “*Analysis of Fast Parallel Sorting Algorithms for GPU Architectures*,” Frontiers of Information Technology., pp. 173-178, 2011.

N. Leischner, V. Osipov and P. Sanders “GPU sample sort,” IEEE International Symposium on Parallel & Distributed Processing., pp.1-10, April 2010.