# A GBDT BASED SENTIMENT ANALYSIS AND CLASSIFICATION OF TWITTER INFORMATION USING OPTIMIZATION ALGORITHM

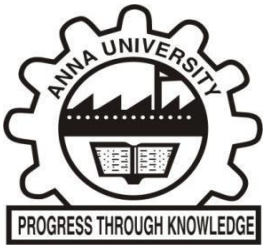
**A THESIS**

***Submitted by***

**NEELAKANDAN S**

***in partial fulfillment of the requirements for the degree of***

**DOCTOR OF PHILOSOPHY**




**FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING**

**ANNA UNIVERSITY**

**CHENNAI 600 025**

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# CENTRE FOR RESEARCH

ANNA UNIVERSITY, CHENNAI-600 025

## CERTIFICATE

This is to certify that all corrections and suggestions pointed out by the Indian /Foreign Examiner(s) are incorporated in the Thesis titled " A GBDT Based Sentiment Analysis and Classification of Twitter Information using Optimization Algorithm. " submitted by Mr. Neelakandan.S

Signature of the Supervisor

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**Proceedings of the Ph.D. Viva-Voce Examination of Mr.Neelakandan.S held at 11:00 AM on 07.05.2021 in Online Mode**

The Ph.D. Viva-Voce Examination of Mr.Neelakandan.S (Reg. No. 1414499760) on his/her Ph.D. Thesis Entitled " A GBDT Based Sentiment Analysis and Classification of Twitter Information using Optimization Algorithm. " was conducted on **07.05.2021** at 11:00 AM in the Online Mode.

**The following Members of the Oral Examination Board were present:**

| | | |
|---|---|---|
| 1. | Dr. S Janakiraman,Assistant Professor,Department of Banking Technology School of Management,Pondicherry University,Kalapet Pondicherry - 605 014 | Indian Examiner |
| 2. | Dr. B Ramadoss,Professor,Department of Computer Applications,National Institute of Technology,Tanjore Main Road NH 67 Near BHEL Thiruchirappalli - 620 015 | Subject Expert |
| 3 | Dr. Paulraj.D,Professor, Department of Computer Science and Engineering, R.M.D. Engineering College,Chennai | Supervisor |

The research scholar, Mr. Neelakandan.S presented the salient features of his/her Ph.D. work. This was followed by questions from the board members. The questions raised by the Foreign and Indian Examiners were also put to the scholar. The scholar answered the questions to the full satisfaction of the board members.

The corrections suggested by the Indian/Foreign examiner have been carried out and incorporated in the Thesis before the Oral examination.

Based on the scholars research work, his/her presentation and also the clarifications and answers by the scholar to the questions, the board recommends that Mr.Neelakandan.S be awarded Ph.D. degree in the **Faculty of Information and Communication Engineering**.

07/05/21

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## BONAFIDE CERTIFICATE

The research work embodied in the present Thesis entitled **"A GBDT BASED SENTIMENT ANALYSIS AND CLASSIFICATION OF TWITTER INFORMATION USING OPTIMIZATION ALGORITHM"** has been carried out in the Department of Computer Science and Engineering, R.M.D. Engineering College, Kavaraipettai. The work reported herein is original and does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion or to any other scholar.

I understand the University's policy on plagiarism and declare that the thesis and publications are my own work, except where specifically acknowledged and has not been copied from other sources or been previously submitted for award or assessment.

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**NEELAKANDAN S**

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# LIST OF SYMBOLS AND ABBREVIATION

| | | |
|---|---|---|
| API | - | Application Programming Interface |
| ANN | - | Artificial Neural Network |
| BVA | - | Block Based Visual Analysis |
| CFS | - | Candidate Feature Selection |
| CCA | - | Canonical Correlation Analysis |
| CNN | - | Convolutional Neural Network |
| CISER | - | Credibility, Interest, And Sentiment Enhanced Recommendation |
| CRM | - | Customer Relationship Management |
| DT | - | Decision Tree |
| DL | - | Deep Learning |
| DLMNN | - | Deep Learning Modified Neural Network |
| DSA | - | Dual Sentiment Analysis |
| DBN | - | Dynamic Bayesian Network |
| EHO | - | Elephant Herd Optimization |
| ET | - | Extend-Type |
| FFNN | - | Feed Forward Neural Network |
| GFS | - | Google File System |
| GBDT | - | Gradient Boost Decision Tree |
| GRN | - | Graph Regression Networks |
| HDFS | - | Hadoop Distributed File System |
| HLDA | - | Hierarchical Latent Dirichlet Allocation |
| I-EHO | - | Improved Elephant Herd Optimization |
| IDF | - | Inverse Document Frequency values |
| KFCV | - | K – Fold Cross Validation |
| KLP | - | Knowledge Learning Process |
| LDA | - | Linear Discriminant Analysis |

| | | |
|---|---|---|
| LSTMs | - | Long Term Short-Term Memory |
| ML | - | Machine Learning |
| NLP | - | Natural Language Processing |
| NN | - | Neural Network |
| POS | - | Part Of Speech |
| PSO | - | Particle Swarm Optimization |
| PSO | - | Particle Swarm Optimization |
| PCA | - | Principal Component Analysis |
| RNN | - | Retinal Neural Networks |
| SA | - | Sentiment Analysis |
| SC | - | Sentiment Classification |
| SDAFI | - | Social Data Analysis And Feedback Information |
| SDA | - | Spatial Data Analysis |
| SSTL | - | Stanford Sense Tree Library |
| SML | - | Supervised Machine Learning |
| SVM | - | Support Vector Machine |
| TF | - | Term Frequency |
| TF-IDF | - | Term Frequency-Inverse Document Frequency |
| WOA | - | Whale Optimization Algorithm |