



**Bhoj Reddy Engineering College for Women**

(Sponsored by Sangam Laxmibai Vidyapeet, Apporoved by AICTE and Affiliated to JNTUH)  
Vinaynagar, IS Sadan Crossroads, Saidabad, Hyderabad-500 059, Telangana. [www.brecw.ac.in](http://www.brecw.ac.in)

# Department of Computer Science and Engineering



# Sparkles

## 2020

### Volume 2

*Creativity is just connecting things...!*

**TECHNICAL MAGAZINE**

## Founders of Sangam Laxmibai Vidyapeet

Sangam Laxmibai Vidyapeet is a voluntary social action group working for empowerment of women and girls. Registered under the Andhra Pradesh Societies Registration Act, It is a not-for-profit organization working in the field of education since 1952.

The Management of the Vidyapeet makes every effort to fulfill the vision of its founders K V Ranga Reddy, Sangam Laxmibai, Mamidi Bhoj Reddy, Bojjam Narsimhulu, Pasham Papaiah, A Shyamala Devi, P Lalitha Devi, B Ramdev, M H Guptha who are no more with us.

### Sangam Laxmibai Vidyapeet

**Established in 1952**



**K V Ranga Reddy**  
(1890-1970)  
Founder President



**Sangam Laxmibai**  
(1911-1979)  
Founder Secretary



**M Bhoj Reddy**  
(1919-2001)  
Founder Treasurer

### The Vidyapeet manages 5 Educational institutions for Girls and Women

- M H Guptha High School for Girls
- Sangam Laxmibai Junior College for Girls
- K V Ranga Reddy Degree College for Women
- Bojjam Narsimhulu Pharmacy College for Women
- Bhoj Reddy Engineering College for Women



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## About BRECW

Bhoj Reddy Engineering College for Women is run by Sangam Laxmibai Vidyapeet, which has 72 years of experience in the field of education.

BRECW was established in the year 1997 and it is managed by an executive committee consisting of persons with a vast experience in the field of education. Within a short period, it has emerged as one of the premier Engineering colleges in the state.

The College campus has the unique advantage of being located in the heart of the city and yet free from noise and dust pollution. With considerable open space and greenery spread over 6.5 acres of land, the campus provides an ideal ambience for the engineering education of girls.

The academic performance of our students has been consistently outstanding with a pass percentage of 85 to 90.

### BRECW Vision

BRECW develops confident and articulate young women into dynamic Engineers equipped with skills, knowledge, values and an attitude to contribute to the society.

### BRECW Mission

- BRECW is committed to providing a challenging, enriching, safe and supportive technical learning environment through its core values of responsibility, respect and compassion.
- Fosters intellectual, spiritual and personal development of young women so that they develop the tools necessary to lead meaningful lives.
- Offers academic curriculum along with an extensive co-curricular program with the support of dedicated staff who ensure that students identify their strengths and develop their skills such as teamwork, leadership, creativity and entrepreneurship.
- Develops independent, adaptable thinkers with a passion for learning, courage to take risks and initiative to apply what is learned.

## Department of Computer Science and Engineering (CSE)

The future of computing systems and information systems rests with the engineers in Computer Science and Engineering (CSE). The Course is meant to advance, evolve and enhance computer science and computing engineering fundamentals to build the intellectual and research capital in the domains of science, engineering and technology. The Course endeavors to equip the CSE in development of computing and IT systems and their proper applications. This has become the core branch of Engineering with all branches depending on it. The department has well established computer laboratories.

### Department Vision



- To become a center of excellence in the field of Computer Science and Engineering.
- To produce competent, confident, innovative and socially responsible engineers with an ability to serve the society.

### Department Mission



- To impart high quality professional training at the undergraduate level with an emphasis on basic principles of Computer Science and Engineering.
- To pass on moral qualities and ethical values to the students.
- To empower the students with the required skills to solve technical problems of modern society.
- To make learning process exciting, stimulating, interesting and exposing students to broad research areas.



**South Block**

**CSE**

**Ground Floor  
&  
First Floor**

## Programme Outcomes (PO's)

### PO1 - Engineering Knowledge:

Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

### PO2 - Problem Analysis:

Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

### PO3 - Design/Development of Solutions:

Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

### PO4 - Conduct Investigations of Complex Problems:

Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

### PO5 - Modern Tool Usage:

Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

### PO6 - The engineer and society:

Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

### PO7 - Environment and Sustainability:

Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

### PO8 - Ethics:

Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

### PO9 - Individual and Team Work:

Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

### PO10 - Communication:

Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

### PO11 - Project Management and Finance:

Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

### PO12 - Life-long Learning:

Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## Program Specific Outcomes (PSO's)

**PSO I:** Identify suitable data structures and algorithms to design and develop computing solutions for real-life problems.

**PSO II:** Able to excel in various programming, project competitions and technological challenges laid by professional societies.

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## Principal's Message

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**Dr J Madhavan**

ME, Ph.D, MISTE, MIE

Principal

Email: [principal.brecw32@gmail.com](mailto:principal.brecw32@gmail.com)

Dear Students,

Bhoj Reddy Engineering college for Women (BRECW) has always evolved while maintaining the fundamentals of an outstanding education for our students. BRECW is committed to providing the best possible environment which encourages and celebrates student's academic achievements and love for learning. Our academic results manifest our vision for providing excellent teaching and learning methodologies. Our faculty team motivates students to develop skills specific to their career path and imperative for future job success.

Extra curricular activities stimulates students to discover and develop their unique talents and healthily building self-esteem as they try new things and learn how they are uniquely talented. Our technical magazine, Tech-Pulse 2019-20 showcases such student generated extra curricular content which is designed and edited by students. My sincere appreciation to editorial and advisory members for their efforts in bringing out this technical magazine.

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## HOD's Message

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### **Mr N Satyanandam**

M.Tech (CSE), MBA, [Ph. D]

HOD-CSE

Email: [hod.cse.brecw@gmail.com](mailto:hod.cse.brecw@gmail.com)

Greetings! On behalf of staff and students of the Department of Computer Science and Engineering of Bhoj Reddy Engineering College for Women (BRECW) at Hyderabad.

Department of Computer Science and Engineering (CSE) is the centre of excellence providing in-depth technical knowledge and opportunities for innovation and scalable with up-to-date computer facilities at par with top engineering colleges in Telangana.

Ever since its inception in the year 1997 with an initial intake of 40 seats in B. Tech, the department has grown by leaps and bounds, not only in terms of quantity but also in terms of quality. Currently CSE department has an intake of 120 seats in B. Tech.

The department gives exposure to its students, about regular engineering curriculum as well as prepare them to face the challenges of today's corporate world, by inculcating a professional attitude in them. The highly qualified, immensely diligent and experienced faculty is continuously involved in developing the skill set of the students in core courses like Programming, Emerging Technologies, Professional Ethics, Open Source Technologies and as well as hands on experience. All the Very Best to all students.



# FACULTY CONTRIBUTION

## List of Workshops/FDP/Refresher courses attended for Academic year 2019-20

### N Satyanandam- Associate Professor

Heart Disease Detection Using Predictive Optimization Techniques, International Journal of Image, Graphics and Signal Processing. MECS Press I.J. Image, Graphics and Signal Processing, 2019, 9, 18-24 Published Online September 2019 in MECS (<http://www.mecs-press.org/>) DOI: 10.5815/ijigsp.2019.09.02.

### Abstract

Health care is a major research domain needed instantaneous solutions. Due to the digitalization of data in each and every domain it is becoming tedious to store and analysis. So, the demand of proficient algorithms for health care data analysis is also increasing. Predictive analytics is the major demand from the health care community to the computing researches in order to predict and reduce the potential health catastrophes. Parallel research attempts are made to predict the possibilities of the disease on the different health care domains at various regions. However, those attempts are limited and not remarkable to achieve the desired outcomes. Recently, in the field of data analytics; Machine Learning techniques became popular in generating optimized solutions with effective data processing capabilities. Henceforth, this research work considers the heart disease analysis using machine learning techniques to determine the disease severity levels. Experiments are made on UCI heart disease dataset and our results shows 92% accuracy the heart severity detection.

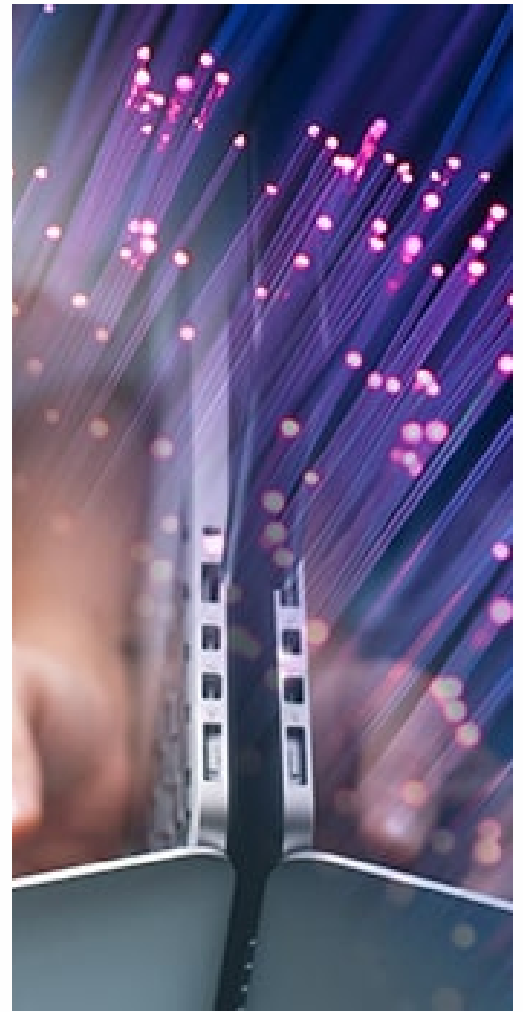


**Mr N Satyanandam**  
M.Tech (CSE), MBA, [Ph.D]  
Associate Professor, BRECW.

## P Sumalatha - Assistant Professor

### Faculty Development Program:

- 8 Weeks AICTE recognized FDP course on “Data Mining” NPTEL Online Certification Course, March 2019 – April 2019.
- 8 Weeks AICTE recognized FDP course on “Theory of Computation” NPTEL Online Certification Course, July 2019 – September 2019.
- 12 Weeks AICTE recognized FDP course on “Computer Networks and Internet Protocol” NPTEL Online Certification Course, January-April 2020.
- 5-Day National level Online Faculty Development Program on “Artificial Intelligence” Organised by VIEW in association with NYCI and Brain O Vision Solutions India Pvt. Ltd., Visakhapatnam, 22nd May 2020 – 26th May 2020.



## N Sudha Laxmaiah - Assistant Professor

### Faculty Development Program:

- Deep Learning and its Application on 25-30 November 2019.



# FACULTY CONTRIBUTION

## A Machine Learning Approach for Network Intrusion Detection System

### Paper Details:

**Paper ID:** IJSRDV8I10283

**Published in:** Volume : 8, Issue : 1

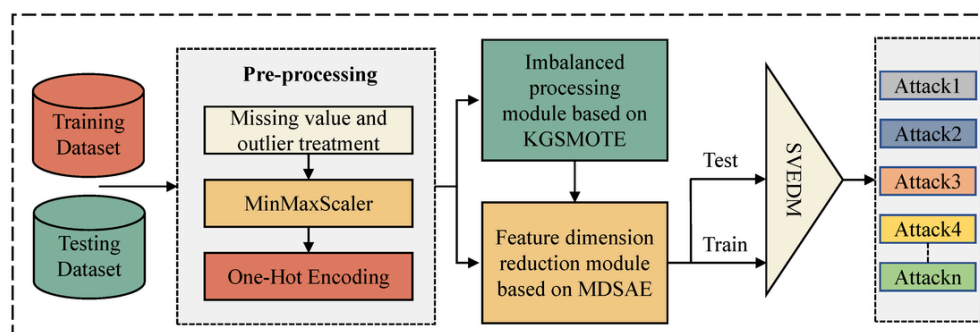
**Publication Date:** 01/04/2020

**Page(s):** 238-241

**Paper Link:** <https://www.ijserd.com/Article.php?manuscript=IJSRDV8I10283>

### Abstract:

With the increase in usage of networking technology and to the advancement of Internet over the last decade, network security has turned out to be one of the important areas of research. Therefore, Intrusion Detection (ID) becomes important and challenging security problem and is widely studied to achieve overall network security success. Several techniques came into existence to detect intrusions based on Machine Learning. Aim of Intrusion Detection System (IDS) is to put checks on attacks and provide desirable support for defense management along with information about the intrusion. Several ID approaches are proposed so far to predict malicious traffic from the network. In this paper, a hybrid approach for the network traffic classification is proposed where Recursive Feature Elimination will be used for selecting feature and Decision Tree will classify the data based on extracted features. The accuracy observed on test data of the classifier is 99%.



**Ms P Sumalatha**

M.Tech (CSE), [Ph. D]

Assistant Professor, BRECW.

# STUDENT CONTRIBUTION

## Combining Data Mining Techniques for Evolutionary Analysis of Programming Languages

### Abstract:

Programming languages have been evolving gradually in response to changes in the programming industry. Many factors have been driving this evolution: for instance, improving language expressiveness, fixing bugs, and introducing new language features. However, modifying programming languages is a challenging process. One of the main difficulties is to gauge the perception of developers regarding the language over time. Thus, we set out to develop a framework aimed at evaluating the evolution of programming languages based on their technical documentation and the community's feedback from online discussions. Essentially, our framework is comprised of three main components: (1) Topic Modeling, which aims to extract the main semantic topics from the language aspects; (2) Sentiment Analysis, whose objective is to evaluate the perception of developers with respect to each identified topic; and (3) Data Visualization, which presents a visual metaphor that summarizes the information obtained in previous steps. To evaluate our proof-of-concept implementation of the framework, we carried out an evolutionary analysis of the Python programming language. According to our results, our framework was able to identify several changes made to the language as well as the programmers' perceptions regarding those changes: for instance, we found that the use of iterators over traditional repetition structures (i.e., count-based repetition) was initially received negatively by the community, but the outlook of developers on this new feature has matured enough for it to be considered beneficial to the programming language.



By:

16321A0471- G Naveena

16321A0472- C Navya

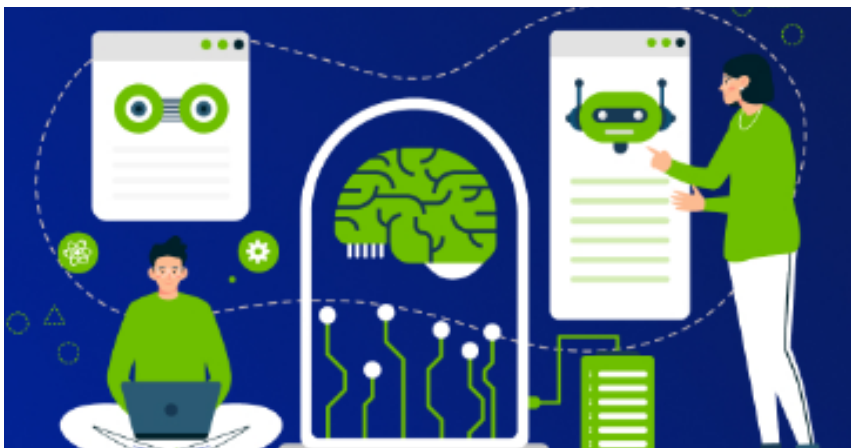
# STUDENT CONTRIBUTION

## Evaluating Model Predictive Performance: A Medicare Fraud Detection Case Study

### Abstract:

Evaluating a machine learning model's predictive performance is vital for establishing the practical usability in real-world applications. The use of separate training and test datasets, and cross-validation are common when evaluating machine learning models. The former uses two distinct datasets, whereas cross-validation splits a single dataset into smaller training and test subsets. In real-world production applications, it is critical to establish a model's usefulness by validating it on completely new input data, and not just using the cross validation results on a single historical dataset. In this paper, we present results for both evaluation methods, to include performance comparisons. In order to provide meaningful comparative analyses between methods, we perform real-world fraud detection experiments using 2013 to 2016 Medicare durable medical equipment claims data. This Medicare dataset is split into training (2013 to 2015 individual years) and test (2016 only). Using this Medicare case study, we assess the fraud detection performance, across three learners, for both model evaluation methods. We find that using the separate training and test sets generally outperforms cross-validation, indicating a better real-world model performance evaluation. Even so, cross-validation has comparable, but conservative, fraud detection results.

### Process Model



By:

16321A0488- B Preethi Reddy

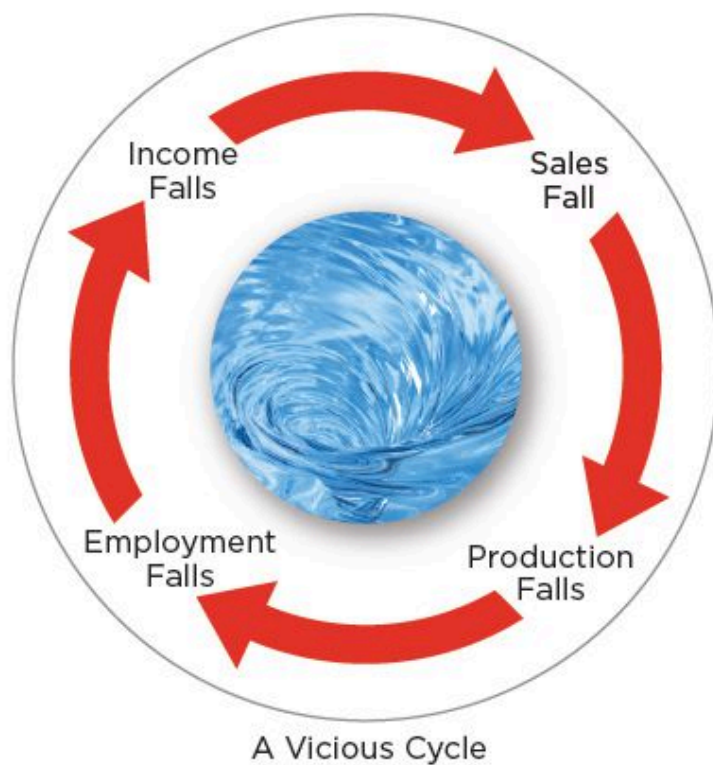
16321A0491- N Priyanka

# STUDENT CONTRIBUTION

## Machine Learning for Classification of Economic Recessions

### Abstract:

The ability to quickly and accurately classify economic activity into periods of recession and expansion is of great interest to economists and policy makers. Machine Learning methods can potentially be applied to the classification of business cycles. This paper describes two machine learning methods, K-Nearest Neighbor and Neural Networks, and compares them to a Dynamic Factor Markov Switching model for determining business cycle turning points. We conclude that machine learning techniques can offer more accurate classifiers that are worthy of additional study.



By:

17321A0512- C Bhanu

17321A0520- K Bhuvaneshwari

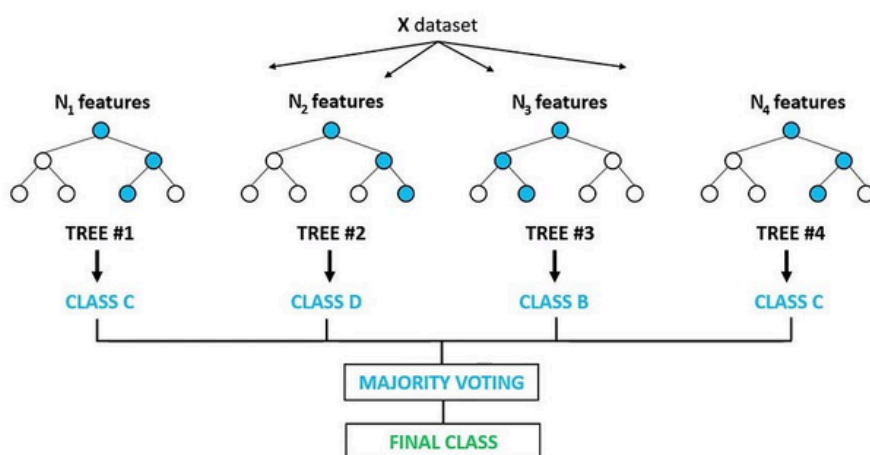
# STUDENT CONTRIBUTION

## Based Feature Tweaking Using Random Forests

### Abstract:

In certain application areas when using predictive models, it is not enough to make an accurate prediction for an example, instead it might be more important to change a prediction from an undesired class into a desired class. In this paper we investigate methods for changing predictions of examples. To this end, we introduce a novel algorithm for changing predictions of examples and we compare this novel method to an existing method and a baseline method. In an empirical evaluation we compare the three methods on a total of 22 datasets. The results show that the novel method and the baseline method can change an example from an undesired class into a desired class in more cases than the competitor method (and in some cases this difference is statistically significant). We also show that the distance, as measured by the euclidean norm, is higher for the novel and baseline methods (and in some cases this difference is statistically significantly) than for state-of-the-art. The methods and their proposed changes are also evaluated subjectively in a medical domain with interesting results.

### Random Forest Classifier



By:  
17321A0573- P Laxmi  
17321A0581- Sadaf Kauser

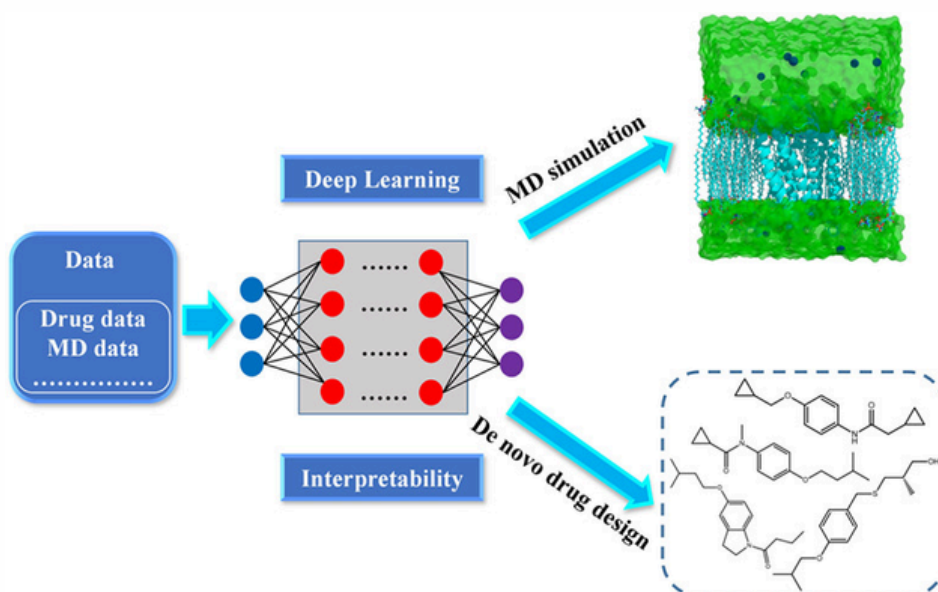
# STUDENT CONTRIBUTION

## Genetic Algorithm Based Deep Learning Model Selection for Visual Data Classification

### Abstract:

Significant progress has been made by researchers in image classification mainly due to the accessibility of large-scale public visual datasets and powerful Convolutional Neural Network(CNN) models. Pre-trained CNN models can be utilized for learning comprehensive features from smaller training datasets, which support the transfer of knowledge from one source domain to different target domains. Currently, there are numerous frameworks to handle image classifications using transfer learning including preparing the preliminary features from the early layers of pre-trained CNN models, utilizing the mid-/high-level features, and fine-tuning the pre-trained CNN models to work for different targeting domains. In this work, we proposed to build a genetic algorithm-based deep learning model selection framework to address various detection challenges. This framework automates the process of identifying the most relevant and useful features generated by pre-trained models for different tasks. Each model differs in numerous ways depending on the number of layers.

### Process Model



By:

16321A0510- V Anupama

16321A0516- Asma Tasneem

**Academic Year: 2019-20**

**Volume 2**



# Sparkles



## **Magazine Details:**

### **Editors:**

Chief Editor: Mr N Satyanandam

Faculty Editor: Ms P Sumalatha

### **Student Editors:**

Ms A Sowmya-16321A0589

Ms R Chandana-16321A0523

Ms A Akshitha-18321A0504

**MAGAZINE**

**TECHNICAL**