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ESTIMATING TOPIC BASED PUBLIC ANXIETY USING FUZZY LOGIC

A PROJECT REPORT
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to

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Declaration

We hereby declare that the work presented in this report entitled "ESTIMATING TOPIC-BASED PUBLIC ANXIETY USING FUZZY LOGIC", was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute. I have given due credit to the original authors / sources for all the words, ideas, diagrams, graphics, computer programs, experiments, results, that are not my original contribution. I have used quotation marks to identify verbatim sentences and given credit to the original authors / sources.
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Abstract

In this present era everyone is using social media in there are some messages, posts or comments that create anxiety or depression for users. Although the assessment of personal stress has been well studied, there has not been much work done to accurately assess social stress, especially in the social community, that can be used to identify mental illness in the community. However, we cannot average the scores of individual stressors to measure stressors in the population, as the following must be taken into account:-

(1) The effect of interpersonal relationships on stress in all groups (design).
(2) Discussion-based content (content summary) showing the stress situation in the community. In this project, we first started to explore social anxiety in social networking (TSNC)-based issues. We evaluate the working framework for TSNC to score in the range of stress levels [0, 1].

We developed a cascade model to measure individual stress scores using a structured model. We developed a fuzzy model to assess the stress score using users' phone calls and wrote a tree model (MC-Tree) to calculate the stress score for TSNC from the subjects.

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Chapter 1

Introduction

1.1 Objectives

Although self-report stress assessment has been well studied, psychologically, there are not many stress assessment tasks in groups that can be used to assess the health of injury, especially in social interaction. However, it is not possible to simply average the anxious person's scores to measure public anxiety in the community because the following should be noted. (2) The Content-Based Discussion of Community Depression (current chapter); This article initiates a study to assess public concern for issues based on social networks (TSNCs). We propose a score to evaluate TSNC anxiety scores in the [0, 1] range. Development of a cascade model to dynamically calculate a person's stress score using an intervention model. We developed a model for assessing the stress score using phone calls from general users, and we created a tree model, called fuzzy tree, to calculate the stress score for TSNC by consensus. To increase. To avoid real-time calculations, for large ensembles, we use small samples to calculate population fear with some confidence. The performance of our model has been validated by the accuracy and retrieval of empirical studies on real Twitter dataSets.

1.2 Motivation and Overview

Social network users form different communities by participating in discussions on different topics. Social media can affect people with social anxiety [1]. In some cases, this can lead to an increased fear of choice or perspective-based decision making. It is the result of comparing the views of online communication that can have a great impact on people. Social media [2] distracts me at work. There is an urgent need for information sharing on social media sites. Feel anxious or depressed when you can't check your social media in time. Don't worry about being embarrassed or embarrassing yourself. Extreme fear of dating or talking to strangers. Fear that others will know that you are afraid. Don't be afraid of physical symptoms that will embarrass you. B. Burning, sweating, trembling, trembling sound. Therefore, examining subjects' emotions, especially fear, based on social interaction (TSNC) [3] becomes an important task in social analysis. Such communities include all users who participate in the discussion on a particular topic. Social network interaction platform. Traditional methods use the Self-Assessment Scale (SAS) to measure self-anxiety by asking subjects to complete a questionnaire. To monitor social media users, it is impractical to ask many users to fill out an SAS questionnaire to measure their own stress levels. Content-based social media analysis will be important in social media analysis, where the entire community of users will participate in the discussion of a topic. The standard method used to measure the Self-Assessment Scale (SAS) is to measure a person's anxiety. According to social theory, social relationships are the basis of the behavior of the network or of other participants. Social anxiety disorder, also known as social phobia, is a chronic social anxiety disorder. This is a problem that usually begins in adolescence. It is very painful and can seriously affect your life. In some people it gets better with age. About 30 percent of adults suffer from psychological and physical stress, up

to an estimated 30 percent according to the American Psychiatric Association. 2 "Community anxiety" refers to the community's response to stressful situations that reflect the collective anxiety created by the cooperation of all members. Social Media Relationships and Stress Anxiety The ever-expanding world of social media is a network of websites designed to allow people to share photos and thoughts with all their friends. These sites have exploded in popularity and thousands of people use them every day. Although such places may seem unrealistic, these discussions can lead to conflict. got up. These relationships are actually problematic for the mental health of many users. In today's world, with more than 15 million people diagnosed with social anxiety disorder in the United States, the risk of social media is increasing

1.3 Issues and Challenges

We cannot simply add up the individual stress levels of each member of the community or the average of those who passed the SAS test. Some concerns are simple, some are not, but all members follow and obey the rules of the community and share their thoughts by discussing community issues. For example, his temporary caregiver has personal anxiety and may be very anxious in a community where parenting is discussed. Regardless of each member's overall SAS score, social conflict is likely to increase as well. Using surveys to estimate public fear is a difficult task in calculating fear scores.

The biggest challenge in our experiment was collecting enough training samples to train our cascading models. Estimate the true value of each element in the fuzzy tree.

1.4 Contribution

To our knowledge, this is the first study to consider and measure public questions about fear based on social interaction. We propose a score scoring and consistency algorithm to predict social anxiety using patterns and contexts.

Using a broad user base, we present a suitable model for assessing public concern content scores of communication on community-based issues. We developed a fuzzy tree model to organize the language to quickly calculate the current fear score. We started the research with the following questions:

How is public concern measured on social network (TSNC)-based issues?
To answer the above question, we cannot simply add or average the individual stress of each member of society as measured by the overall SAS. Some like to worry, some don't, but all members listen and follow the community's rules and share their thoughts by discussing topics in the community. For example, elementary school parents with high self-esteem may experience high levels of social anxiety.

(1) The Structural component:-
The structure of the community (i.e. the relationship between its members) influences the dissemination of information and the behavior of its members. Balanced models show that a person's emotions (positive or negative) are usually determined by their relationship with that person. Often times, negative emotions run faster and deeper in relationships than positive emotions.
In short, there is a growing need for users to connect to networks. Therefore, the relationship between people in the community plays an impor-

tant role in TSNC's public pressure.

(2) The Topical component:-
At TSNC, members communicate with each other via social media to exchange thoughts and ideas about a topic. These words reflect the emotional state of the members, especially. The 'anxiety' that we focus on in this article constitutes another important dimension of social anxiety assessment. Considering the interactions involved in the process of posting, retweeting, and commenting, the middle emphasis of the message alone isn't enough, because the group isn't simply or among members.
We propose a framework for assessing public pressure on TSNC. Our framework calculates the regional stress model for each community separately and normalizes the linear combination of the two scores to the range [0, 1]; this is the higher stress score in society, where higher scores correspond to greater public concern. To obtain the stress score, we must first measure the stress of each member. Based on the results of SAS surveys collected from users' social networks, our model is trained to understand the relationship between users' stress scores and their social network information (eg social network information). , User information). Next, we create a cascading algorithm that determines the effect of the kth connection from the transmission/community feedback, calculates each member's stress score step by step, and adds up each member's stress scores to generate the stress. Community Fraction.

For scoring content, we propose a model to assess specific stress issues in TSNC messages based on retweet/comment chains. We build a tree model (MC-Tree) and create a forest of MC-Trees to organize the original message (as root) and send messages and comments (as child nodes). We then use clustering to get a local stress score for each tree and add up all forest scores to get a local stress score for TSNC.
In practice, real-time calculation of stress scores for communities may

be expensive or impractical, especially for large communities. Therefore, we continue to develop a supplemental sampling-based method to quickly estimate public concern within a reliable range using a subset of the entire population.

1.5 Organization of the Project

In this project we are starting from collective enough data samples from social media networks to learn our model. After that we will calculate first anxiety on the basis of topic based in that calculation. We calculate particular topic is present in how much percent of the total dataset so that we came into conclusion that this keyword(anxiety containing word) is having high anxiety score by which ant-depression committee or anti-suicidal committee for the prevention of suicides on the basis of comments and post messages. After calculation of Topical Anxiety we calculate the Structural anxiety in which we use deep neural networking to train our model to calculate the anxiety on which how user relationship with others. At the end we have two types of anxiety scores first one is topical anxiety and second one is structural anxiety after applying fuzzy logic to both of these scores a level is decided on which anxiety evaluation will be done.

Chapter 2

Literature Review

2.1 Research Papers Review

Research literature is the result of analysis of national and international scientific journals by previous researchers. Identify key decision support processes and research data before deciding on options they can learn more about and use. Previous studies have analyzed the classification of product risk (SCR) using previously studied fuzzy methods and incorporated it into the assessment method. Finally, they validated the model with numerical examples, showing that the method is not only adapted to existing decision-making processes, but also includes decision-making preferences in the optimization process. The aim of this study is to determine the relationship between students' technology use and their stress and aggression levels using fuzzy logic method. Technology use is defined according to the following dimensions: - Technology use, mass media, the role of technology in daily life, usage education, communication use.

We explore attitudes and behaviors towards online relationships as a person with depression. They conducted face-to-face interviews with 14 active Twitter users, half of whom were depressed and half were not. Their results show that there are significant differences between the two groups in their understanding of online social media and how they be-

have in these systems. In this article, they explore traditional methods used to predict suicide attempt to limit exposure and quantify the risk of this risky behavior. Therefore, they tried to overcome these limitations by applying machine learning to electronic medical records in large medical databases.

In this project, we found that many scales were created to measure the stress of relationship between students in various situations, but none of the research on measuring stress on social media platforms. .This study describes the development and validity of the Multidimensional Social Anxiety Scale for Social Media Users (SAS-SMU), which can be used to measure social anxiety disorder with platforms, in university students. Relationships This study was carried out in two stages.

In the first stage, data collected from 174 students were used to provide evidence for the validity and reliability of the model and its dimensions. A four-dimensional model emerged: shared content stress, latent stress, emotional stress, and self-evaluating stress. In the second stage, the four-item model of the 21-item SAS-SMU was validated using data collected from 510 students. The Cronbach's alpha coefficient for this dimension ranges from 0.80 to 0.92. In the second step, the 21-item SAS-SMU four-factor model was analyzed using data collected from 510 university students. The Cronbach's alpha coefficient for this dimension varies between 0.80 and 0.92.

Analysis of the topic "Knowing that you are not satisfied: creating and improving the study of questions" found that research papers today often make large files in groups of tens, hundreds, or even thousands. technology that supports near real-time decision making. Data volume and disk and memory bandwidth limitations often prevent interactive communication from being responsive. However, it is generally accepted

that many applications can tolerate some errors.

This research begins with observations of online course services widely available in the media and the internet. Next, the researchers went directly to see the existing course materials and spread them on different platforms, and then continued with discussions in the form of interviews with experts. Through interviews and Sihotang and Utama, Journal of System and Management Sciences observations, a very close relationship was obtained between the organizing company and the course service provider, course user, or so-called learner (student). So that the research study is continued with a literature study. Several studies have been conducted by previous researchers related to online learning.

This research is closely related to the performance of learning users (students), the benefits of service providers (companies), and learning management. Research that refers to student performance with the help of machine learning. Research in detecting student performance. This research begins by completing the data in the form of a dataset of test results with a parameter-based algorithm. The results of this study showed that the student datasets produced different qualities. This causes shortcomings in this study, namely the scope of the analysis to determine absolute assumptions that still have to be eliminated again. Model is the determination of parameters, to later investigate the value of the decision value before entering the process of determining the basis in computational calculations using fuzzy logic.

Selecting the online course material itself has parameters that are used as the basis for the formation of the model; for that, an observation process is used such as interviews, surveys.

Although various scales have been developed to measure social anxi-

ety among students in various fields, none of the studies have addressed social anxiety in measuring the quality of social platforms. This study explains the development and validation process of the Multidimensional Social Anxiety Scale for Social Media Users (SAS-SMU), which can be used to measure social anxiety caused by social media platforms in university students. This study was carried out in two stages. In the first stage, data collected from 174 students were used to provide evidence for the validity and reliability of the model and its dimensions. A four-dimensional model emerged: shared content anxiety, privacy concerns, emotional anxiety, and self-evaluated anxiety.

In the second phase, data collected from 510 students were used to validate the four models of the 21-item SAS-SMU. Cronbach's Alpha coefficients for this dimension range from 0.80 to 0.92, indicating sufficient reliability. Additional validation studies were also performed and their findings presented. This valid scale will be a useful tool for researchers and teachers to measure social anxiety in university students as social media users.

A person's emotional state affects his perception of the world and the people in it. In this article, we explore online social media's attitudes and behaviors as a person with depression. We conducted face-to-face interviews with 14 active Twitter users, half of whom were depressed and half were not. Our results show significant differences between the two groups in understanding online relationships and behavior in the system. People without depression see Twitter as a tool to use and share, while people with depression see it as a tool for social and emotional awareness. We discuss various interventions for future counseling that may be more effective for depressed clients and provide insights to help depressed clients meet their needs.

The use of technology such as weather, mobile phone and internet has both positive and negative effects. In this study, the effect of technology on students' aggression and anxiety was investigated using fuzzy logic approach. 100 students were invited to participate in this study in order to evaluate the effect of technology used on students' violence and anxiety levels.

Psychological variables were collected from the questions of "technology use", "social impact", "the role of technology in daily life", "using learning", "using communication" and "improving stress situation". The logic in this study allows researchers to resolve the bias and uncertainty of input data and build more reliable models for calculating communication feedback.

The display think about proposes a decision-making demonstrate based on diverse models of driver behavior, pointing to guarantee integration between street security and crash diminishment based on an examination of speed confinements beneath climate conditions. The display consider examined contrasts in street security state of mind, driver behavior, and climate conditions I-69 in Rock, Genesee Province, Michigan, utilizing the fluffy rationale approach. A questionnaire-based study was conducted among a test of Singaporean (n = 100) proficient drivers. Security level was evaluated in connection to speed limits to decide whether the proposed speed restrain contributed to a unsafe or secure circumstance. The test comes about appear that the speed limits examined on distinctive roads/in diverse climate were based on the participants' reactions. The members might increment or keep their current speed restrain or decrease their speed restrain a small or altogether. The ponder comes about were utilized to decide the speed limits required on diverse roads/in diverse climate to diminish the number of crashes and to actualize secure driving conditions based on the climate. Changing

the speed restrain from 80 mph to 70 mph diminished the number of crashes happening beneath damp street conditions. Concurring to the comes about of the fluffy rationale think about calculation, a driver's feelings can anticipate yields. For this think about, the fluffy rationale calculation assessed drivers' feelings agreeing to the connection between the weather/road condition and the speed restrain. The fluffy rationale would contribute to evaluating a capable include of human control. The fluffy rationale calculation can clarify smooth connections between the input and yield. The input–output relationship assessed by fluffy rationale was utilized to get it contrasts in drivers' sentiments in changing road/weather conditions at diverse speed limits.

The nature of mental illness is still a puzzle. There is a suspicion that common diseases misrepresent the cause of mental illness. However, psychologists and researchers now have an unprecedented opportunity to use machine learning techniques (for example, support vector machines, modern neural network algorithms, cross-validation methods) to learn from complex patterns in the brain, behavior and genetics.

Combining these analytical methods with valuable data from organizations and knowledge pools has the potential to impact the biology-based redefinition of major mental disorders. In the next 10 to 20 years, patients can be classified according to different biological diseases so that traditional diseases can be crossed.

In a new era of evidence-based psychiatry for individual patients, objectively measured endophenotypes may allow for personalized predictions for early detection, selective treatment therapy, and drug therapy to reduce disease burden. This guide aims to educate practitioners and researchers about the opportunities and challenges posed by introducing machine intelligence into psychology practice.

2.2 Research Summary

S.No.	Author	Year	Topic
1	Minsu Park, KAIST David McDonald University of Washington, Meeyoung Cha	2013	Perception Differences between the Depressed and Non-Depressed Users in Twitter
2	Walsh, C. G.,Ribeiro, J. D., & Franklin, J. C.	2017	Predicting Risk of Suicide Attempts Over Time Through Machine Learning
3	Alkis, Y., Kadirhan, Z., & Sat, M	2017	Development and Validation of Social Anxiety Scale for Social Media Users.
4	Agarwal, S., Milner, H., Kleiner, A., Talwalkar, A., Jordan, M., Madden, S., ... & Stoica, I	2014	Knowing when you're wrong: building fast and reliable approximate query processing systems

Figure 2.1: Research Summary

2.3 Fuzzy Logic

The fuzzy logic theory is based on the concept of relative hierarchical property originating from human thought and intelligence. Lotfi A. Zadeh published the first famous research paper on fuzzy sets in 1965. Fuzzy logic can process data derived from inference and knowledge, that is, information that is clear, vague, ambiguous, has no definite truths or clear boundaries. Fuzzy logic allows fuzzy human evaluations to be incorporated into computational problems. It also provides a good way to resolve various conflicts and consider better options.

New computational techniques based on fuzzy logic can be used to build intelligent systems for decision making, recognition, pattern recognition, optimization and control. Fuzzy logic is useful to many people involved in research and development, including engineers (electrical, mechanical, civil, chemical, aerospace, agricultural, biomedical, computing, environmental, geological, industrial, and mechatronics), mathematics, computer software Developers, and researchers. natural scientists (biology, chemistry, earth sciences and physics), medical scientists, social scientists (economics, management, political science and psychology), public policy analysts, business analysts and lawyers. In fact, the application of fuzzy logic, once considered a mysterious mathematical curiosity, finds applications in many fields of engineering and literature. Fuzzy logic has been used in many applications such as facial pattern recognition, air conditioners, washing machines, vacuum cleaners, anti-skid braking systems, transmission systems, subway systems and control of unmanned helicopters, intelligent systems for multi-purpose optimization of power. systems, weather forecasting, new product costs or risk assessment models, diagnostic and treatment planning, and the stock market.

Fuzzy logic is successfully used in many fields such as control system

engineering, image processing, energy engineering, industrial automation, robotics, consumer electronics and optimization. This branch of mathematics breathes new life into a long-standing science. Thousands of researchers have worked on fuzzy logic and created patents and research documents. According to Zadeh's report on the impact of fuzzy logic as of March 4, 2013, there are 26 research books on fuzzy logic theory or application in the INSPEC database, 89,365 publications on fuzzy logic theory or applications, and 22,657 publications in the MathSciNet database.

The theory or application of fuzzy logic, there are fuzzy logic-related patent applications and 16,898 patents in the United States, and 7149 fuzzy logic-related patent applications and patent licenses in Japan. The number of research grants is increasing day by day, and so is the price.

Zadeh launched the Berkeley Initiative for Soft Computing (BISC), a prestigious lab at UC Berkeley that develops the concepts and applications of fuzzy logic and soft computing. The purpose of this special issue is to review the advancement of fuzzy logic in a variety of real world applications and products in various fields. Although fuzzy logic has applications in many different fields, people who are not familiar with smart machines do not know how it is used in different products currently on the market. For many, the engineering and scientific meaning of the word hairless remains unclear. It is important for these people to understand where and how fuzzy logic can be used.

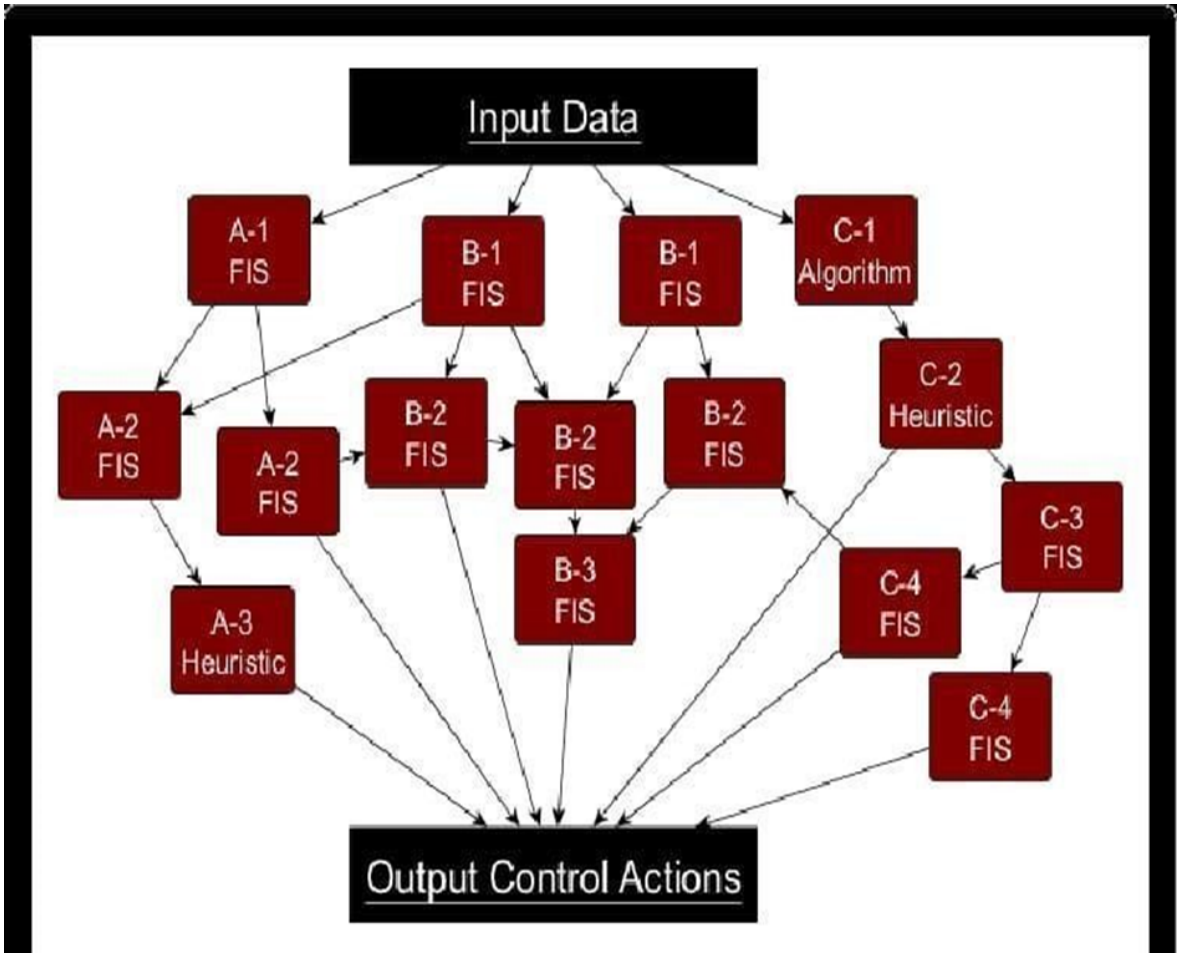

Figure 2.2: Fuzzy Logic

2.4 Fuzzy Logic Architecture

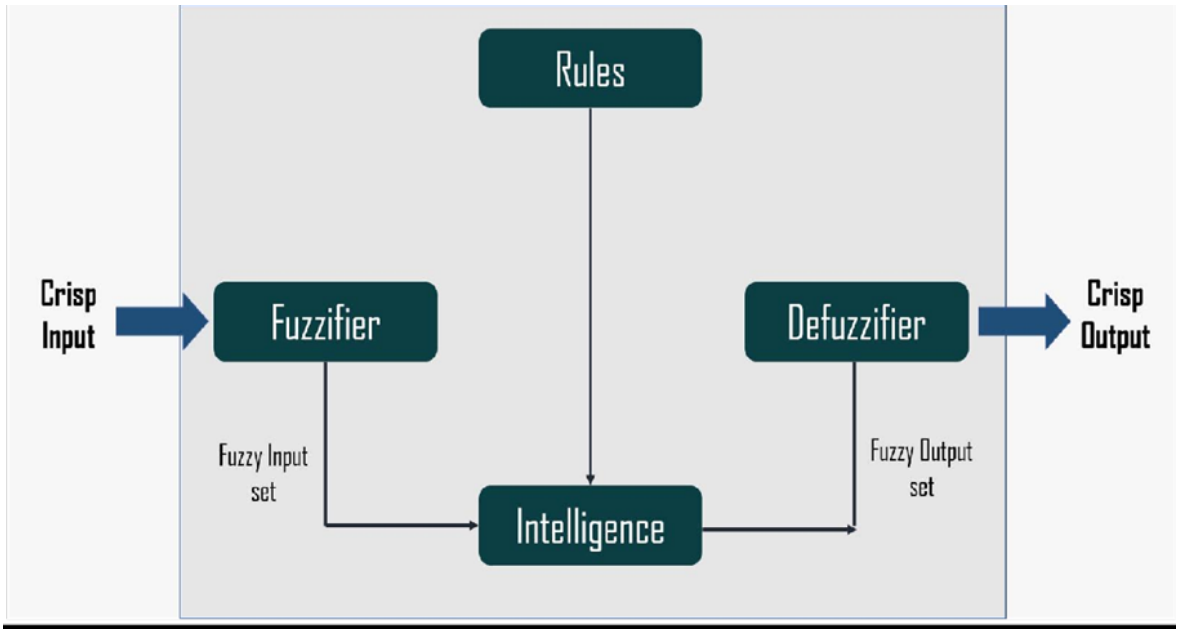

Figure 2.3: Fuzzy Logic Architecture

1. **Rules**

   It has all the rules and if so conditions provided by experts to control decision making. Recent updates to fuzzy theory provide many effective methods for designing and tuning fuzzy controllers. Overall, these improvements reduce fuzzy code.

2. **Fuzzification**

   This step converts input or exact numbers to fuzzy values. You can measure precise inputs from sensors and send them to other control functions. It divides the feedback signal into five steps such as -

LP	X is Large Positive
MP	X is Medium Positive
S	Small
MN	X is Medium Negative
LN	X is Large Negative

Table 2.1: Fuzzification Steps

3. **Inference Engine**

   Determines how good the fuzzy input is for the code. According to the immigrants, he will decide which law to fire. The resulting rules come together to form the administration.

4. **Defuzzification**

   The Defuzzification process converts fuzzy values to non ambiguous values. There are many types of courses available and you need to use experts to choose the most suitable method.

5. **Fuzzy Logic vs Probability**

Fuzzy Logic	**Probability**
We really try to capture the essence of fuzziness.	Unrealistic events that may or may not happen.
It captures the meaning of partial truth	It captures Track Information.
It takes mathematically bases on the precision levels	It is a mathematical model of ignorance

Table 2.2: Fuzzy Logic vs Probability

2.5 Artificial Intelligence (AI)

Artificial Intelligence (AI) represents a dynamic field of computer science dedicated to developing systems that can perform tasks requiring human-like intelligence.
With advancements in machine learning algorithms, increased computational power, and the availability of vast datasets, AI has rapidly evolved, leading to transformative applications across various domains. This section provides a comprehensive overview of AI, encompassing its historical development, key concepts, applications, and future prospects.

Historical Evolution of AI

The roots of AI can be traced back to ancient civilizations, where myths and legends depicted artificial beings with human-like attributes. However, the modern era of AI began in the 1950s, marked by seminal contributions from pioneers like Alan Turing and John McCarthy. Turing introduced the concept of machine intelligence through the Turing Test, while McCarthy coined the term "artificial intelligence" and organized the Dartmouth Conference in 1956, marking the formal inception of the field. Since then, AI research has progressed through various stages, including symbolic AI, connectionism, and the emergence of machine learning paradigms.

Key Concepts in AI

AI encompasses a diverse range of concepts and techniques, including:

- **Machine Learning (ML):** ML focuses on developing algorithms that can learn from data and make predictions or decisions without

explicit programming. Supervised learning, unsupervised learning, and reinforcement learning are fundamental paradigms within ML.

- **Deep Learning:** Deep learning employs artificial neural networks with multiple layers to learn complex patterns in data. Its success in tasks such as image recognition, natural language processing, and speech recognition has propelled AI to new heights.

- **Natural Language Processing (NLP):** NLP enables computers to understand, interpret, and generate human language, facilitating applications like machine translation, sentiment analysis, and chatbots.

- **Computer Vision:** Computer vision enables machines to interpret and understand visual information from the real world, powering applications like image recognition, object detection, and video analysis.

- **Robotics:** Robotics integrates AI with mechanical engineering to create intelligent machines capable of performing physical tasks autonomously or semi-autonomously.

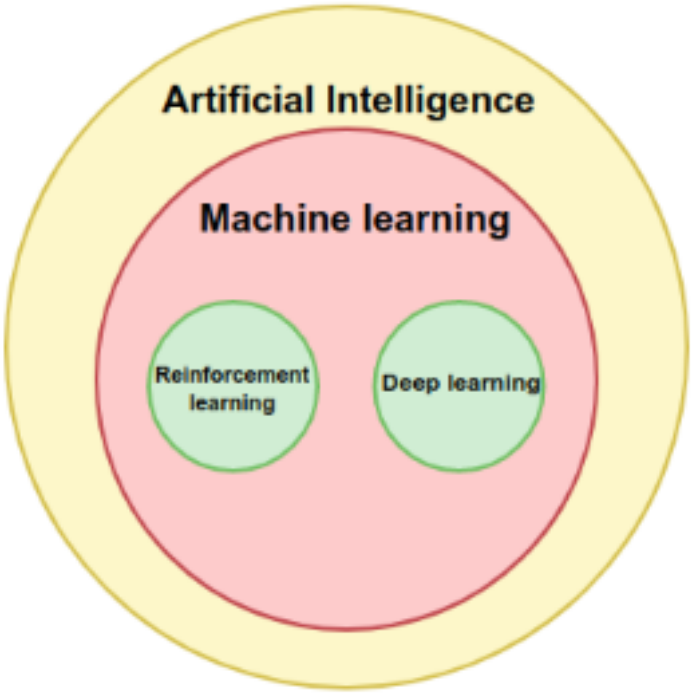

Figure 2.4: AI Domains and Concepts

Applications of AI

AI technologies find applications across diverse domains, including:

- **Healthcare:** AI aids in medical diagnosis, personalized treatment planning, drug discovery, and patient monitoring.

- **Finance:** AI powers algorithmic trading, fraud detection, risk assessment, and customer service chat-bots in the financial sector.

- **Transportation:** Autonomous vehicles, traffic management systems, and predictive maintenance leverage AI technologies to enhance safety and efficiency.

- **Retail:** AI-driven recommendation systems, inventory management, supply chain optimization, and cashier-less stores optimize

operations in the retail industry.

- **Education:** AI-enabled adaptive learning platforms, intelligent tutoring systems, and educational games offer personalized learning experiences for students.

- **Entertainment:** AI-driven content recommendation, personalized marketing, content creation, and virtual assistants enhance user experiences in the entertainment industry.

Challenges and Future Directions

Despite its advancements, AI faces challenges such as ethical concerns, privacy issues, and the need for robust and interpretable AI systems. Addressing these challenges requires efforts in areas like explainable AI, ethics frameworks, AI safety, and human-AI collaboration. Moving forward, stakeholders must navigate these challenges responsibly to ensure that AI technologies benefit society while mitigating potential risks.

2.6 Machine Learning (ML)

Machine Learning (ML) is a sub-field of artificial intelligence (AI) that focuses on developing algorithms capable of learning from data and making predictions or decisions without being explicitly programmed.
ML techniques enable computers to identify patterns, extract insights, and make informed decisions based on data. This section provides a comprehensive overview of ML, including its fundamental concepts, types of learning, popular algorithms, applications, and future directions.

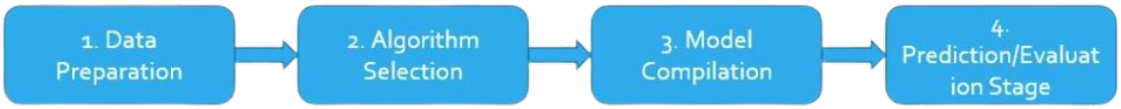

Figure 2.5: Machine Learning Process

Fundamental Concepts of Machine Learning

At the core of machine learning are the following fundamental concepts:

- **Data:** ML algorithms learn from data, which can be structured (e.g., tabular data) or unstructured (e.g., text, images, audio).

- **Features:** Features are the individual variables or attributes present in the data that are used to make predictions or decisions.

- **Models:** ML models are mathematical representations of patterns and relationships within the data.

- **Training:** Training involves feeding data into ML algorithms to adjust model parameters and optimize performance.

- **Evaluation:** Evaluation assesses the performance of ML models on unseen data to ensure generalization and reliability.

- **Prediction:** ML models use learned patterns to make predictions or decisions on new, unseen data.

Types of Machine Learning

Machine learning can be categorized into three main types:

1. **Supervised Learning:** In supervised learning, algorithms learn from labelled data, where each example is associated with a target output. The goal is to learn a mapping from inputs to outputs, enabling the algorithm to make predictions on new, unseen data.

2. **Unsupervised Learning:** Unsupervised learning involves learning from unlabeled data, where the algorithm seeks to identify hidden patterns or structures within the data. Common tasks include clustering, dimensionality reduction, and anomaly detection.

3. **Reinforcement Learning:** Reinforcement learning (RL) is a type of learning where an agent learns to interact with an environment to achieve a goal. The agent receives feedback in the form of rewards or penalties based on its actions, allowing it to learn optimal strategies over time.

Popular Machine Learning Techniques

Machine learning algorithms encompass a wide range of techniques, including:

- **Linear Regression:** A simple algorithm for modelling the relationship between a dependent variable and one or more independent variables.

- **Logistic Regression:** Used for binary classification tasks, logistic regression models the probability of a binary outcome.

- **Decision Trees:** Tree-based algorithms that recursively partition the feature space to make predictions.

- **Random Forest:** An ensemble method that combines multiple decision trees to improve performance and reduce overfitting.

- **Support Vector Machines (SVM):** SVMs are powerful algorithms for classification and regression tasks, particularly in high-dimensional spaces.

- **K-Nearest Neighbours (KNN):** KNN is a non-parametric algorithm that makes predictions based on the similarity of input data points to their nearest neighbours.

Applications of Machine Learning

Machine learning has a wide range of applications across various domains, including:

- **Healthcare:** ML is used for medical diagnosis, patient monitoring, personalized treatment planning, and drug discovery.

- **Finance:** ML powers algorithmic trading, fraud detection, credit scoring, and risk assessment in the financial sector.

- **E-commerce:** ML drives recommendation systems, personalized marketing, demand forecasting, and customer segmentation in e-commerce platforms.

- **Autonomous Vehicles:** ML algorithms enable object detection, path planning, and decision-making in autonomous vehicles.

- **Natural Language Processing:** ML techniques facilitate tasks such as machine translation, sentiment analysis, text summarisation, and chat-bots in NLP applications.

Challenges and Future Directions

While ML has made significant advancements, it faces several challenges, including data quality, interpretability, fairness, and scalability. Addressing these challenges requires interdisciplinary efforts and ongoing research in areas such as explainable AI, fairness and bias mitigation, federated learning, and lifelong learning. Additionally, emerging trends like federated learning, meta-learning, and automated machine learning (AutoML) hold promise for advancing the capabilities and accessibility of ML technologies.

2.7 Artificial Neural Networks (ANNs)

Artificial Neural Networks (ANNs) are computational models inspired by the structure and functioning of biological neural networks in the human brain. ANNs consist of interconnected nodes, or neurons, organized in layers, allowing them to learn complex patterns and relationships from data. This section provides a detailed overview of ANNs, covering their architecture, training process, types, activation functions, popular architectures, applications, and future directions.

Architecture of Artificial Neural Networks

The architecture of an artificial neural network typically consists of the following components:

- **Input Layer:** The input layer receives raw data or features and passes them to the network for processing.

- **Hidden Layers:** Hidden layers are intermediate layers between the input and output layers, where neurons perform computations and extract features from the input data.

- **Output Layer:** The output layer produces the final predictions or decisions based on the processed input data.

- **Connections (Weights):** Connections between neurons are represented by weights, which are adjusted during the training process to minimize prediction errors.

- **Activation Functions:** Activation functions introduce non-linearity into the network, enabling it to learn complex relationships and make non-linear transformations of the input data.

Training Process of Artificial Neural Networks

The training process of ANNs involves the following key steps:

1. **Initialization:** Initialize the weights and biases of the network to small random values.

2. **Forward Propagation:** Pass the input data through the network to obtain predictions.

3. **Loss Calculation:** Calculate the difference between the predicted output and the true output using a loss function.

4. **Backpropagation:** Propagate the error backwards through the network and adjust the weights using gradient descent optimization algorithms to minimize the loss.

5. **Iteration:** Repeat the forward and backward propagation steps iteratively until the model converges to optimal weights and output.

Types of Artificial Neural Networks

Artificial Neural Networks can be classified into various types based on their architecture and learning mechanisms, including:

- **Feedforward Neural Networks (FNNs):** FNNs are the simplest type of neural networks, where information flows in one direction from the input layer to the output layer without feedback loops.

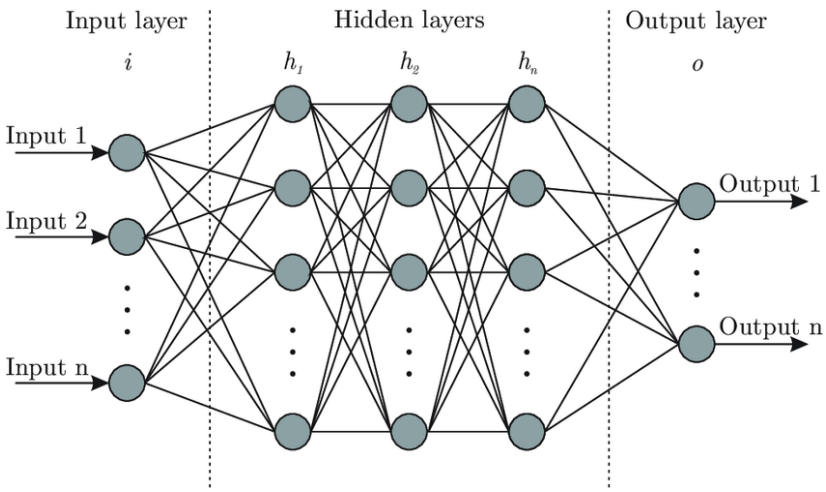

Figure 2.6: An Example of Multi-layered FNN

- **Recurrent Neural Networks (RNNs):** RNNs have connections that form directed cycles, allowing them to process sequences of data with temporal dependencies.

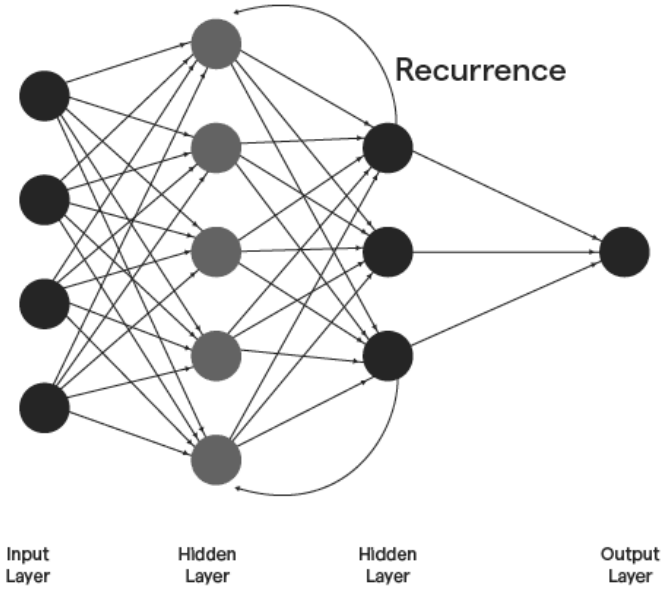

Figure 2.7: An Example of RNN

- **Convolutional Neural Networks (CNNs):** CNNs are specialized for processing grid-like data, such as images, by leveraging convolutional layers that extract spatial features.

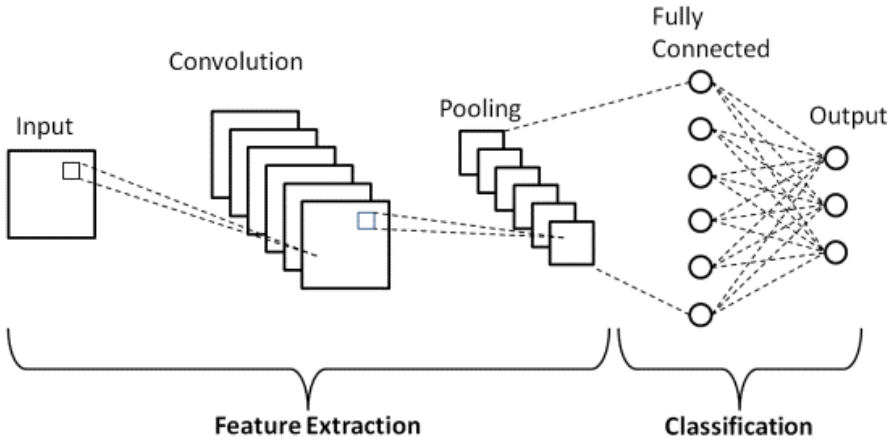

Figure 2.8: An Example of CNN

Activation Functions in Artificial Neural Networks

Activation functions introduce non-linearity into the network, enabling it to learn complex patterns and relationships in the data. Commonly

used activation functions include:

1. **Sigmoid Function (Logistic Function):** The sigmoid function squashes the input values into the range [0, 1], making it suitable for binary classification tasks.

   Equation:

   $$f(x) = \frac{1}{1 + e^{-x}}$$

   Graph:

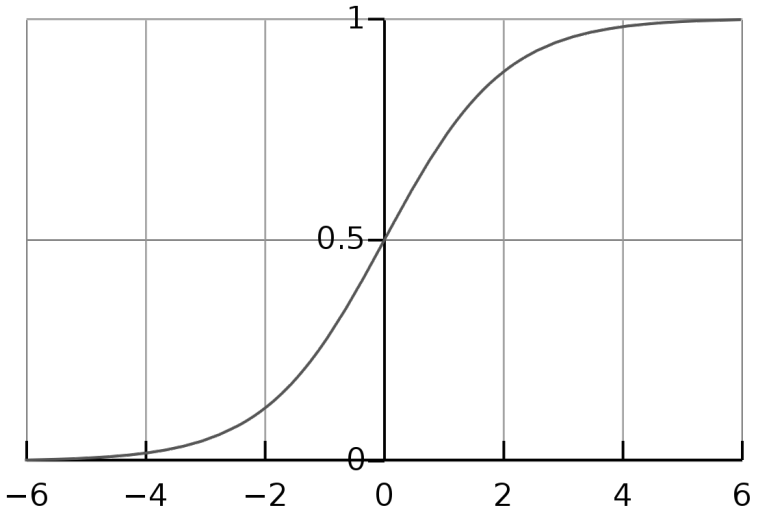

Figure 2.9: Graph for a Sigmoid Function

2. **Hyperbolic Tangent (Tanh) Function:** Similar to the sigmoid function, the tanh function squashes the input values into the range [-1, 1], providing stronger gradients and better convergence properties.

   Equation:

   $$f(x) = \frac{e^{x} - e^{-x}}{e^{x} + e^{-x}}$$

Graph:

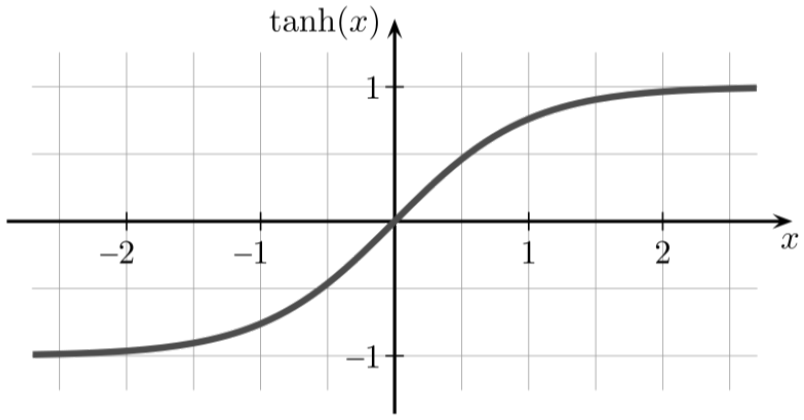

Figure 2.10: Graph for a Tanh Function

3. **Rectified Linear Unit (ReLU):** ReLU sets all negative input values to zero, introducing sparsity and enabling faster training compared to sigmoid and tanh functions.

Equation:

$$f(x) = max(0, x)$$

Graph:

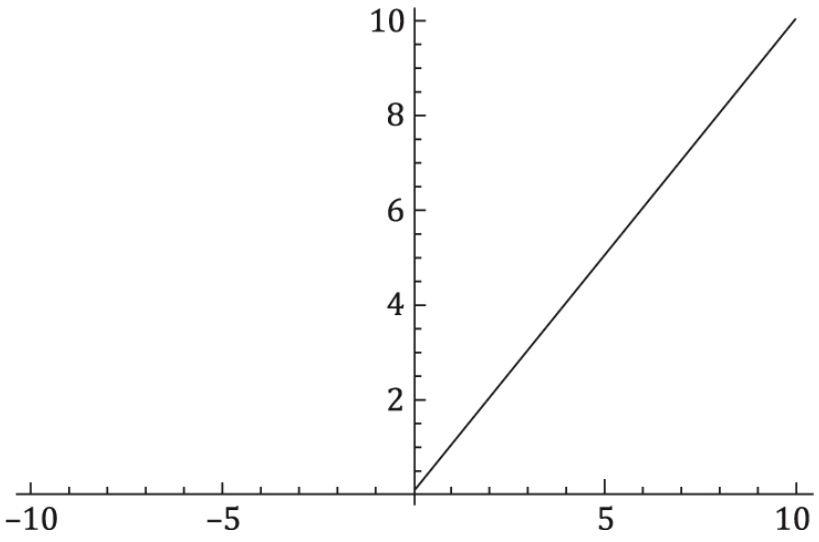

Figure 2.11: Graph for a ReLU Function

Popular Architectures of Artificial Neural Networks

Several popular architectures of artificial neural networks have emerged, including:

- **Multilayer Perceptrons (MLPs):** MLPs consist of multiple layers of neurons with fully connected connections between adjacent layers.

- **Long Short-Term Memory (LSTM) Networks:** LSTMs are a type of recurrent neural network designed to capture long-term dependencies in sequential data.

- **Gated Recurrent Units (GRUs):** GRUs are similar to LSTMs but have a simpler architecture, making them more computationally efficient.

- **Deep Belief Networks (DBNs):** DBNs are hierarchical generative models consisting of multiple layers of stochastic, latent variables.

Applications of Artificial Neural Networks

Artificial Neural Networks have found applications across various domains, including:

- **Computer Vision:** CNNs are widely used for image classification, object detection, facial recognition, and image generation tasks.

- **Natural Language Processing:** RNNs and transformer-based architectures like BERT are employed for tasks such as machine translation, text generation, sentiment analysis, and named entity recognition.

- **Speech Recognition:** Recurrent and convolutional neural networks are utilized for speech recognition, speaker identification, and speech synthesis applications.

- **Healthcare:** ANNs are applied in medical image analysis, disease diagnosis, drug discovery, and personalized medicine.

- **Finance:** Neural networks are employed for stock market prediction, credit scoring, fraud detection, and algorithmic trading in the financial sector.

Challenges and Future Directions

Despite their success, artificial neural networks face challenges such as overfitting, interpretability, and scalability. Addressing these challenges requires research in areas such as regularization techniques, explainable AI, model compression, and efficient training algorithms. Furthermore, emerging trends like neurosymbolic AI, lifelong learning, and neuromorphic computing hold promise for advancing the capabilities and scalability of artificial neural networks.

Chapter 3

Design of Project Model

3.1 Work Break Down Structure

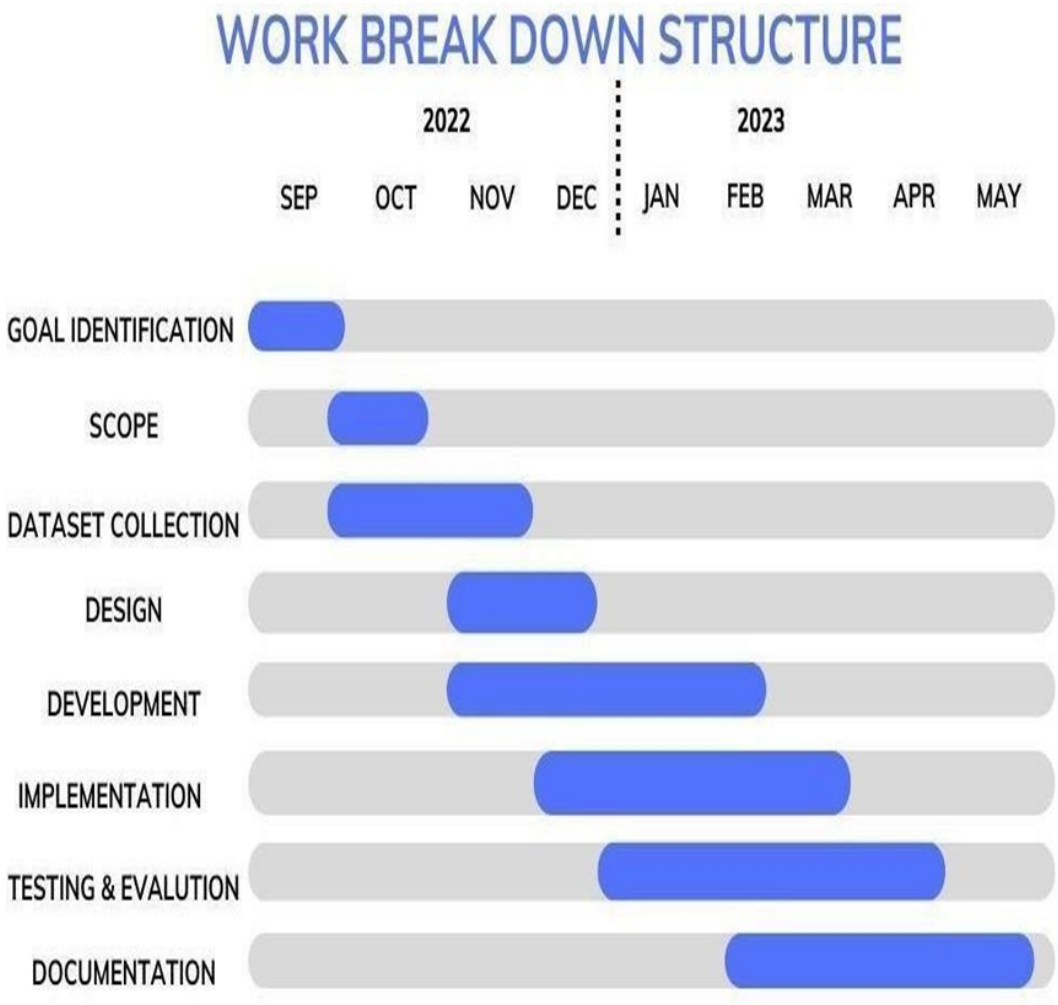

Figure 3.1: Work Break down structure

3.2 Public Anxiety Estimation Framework

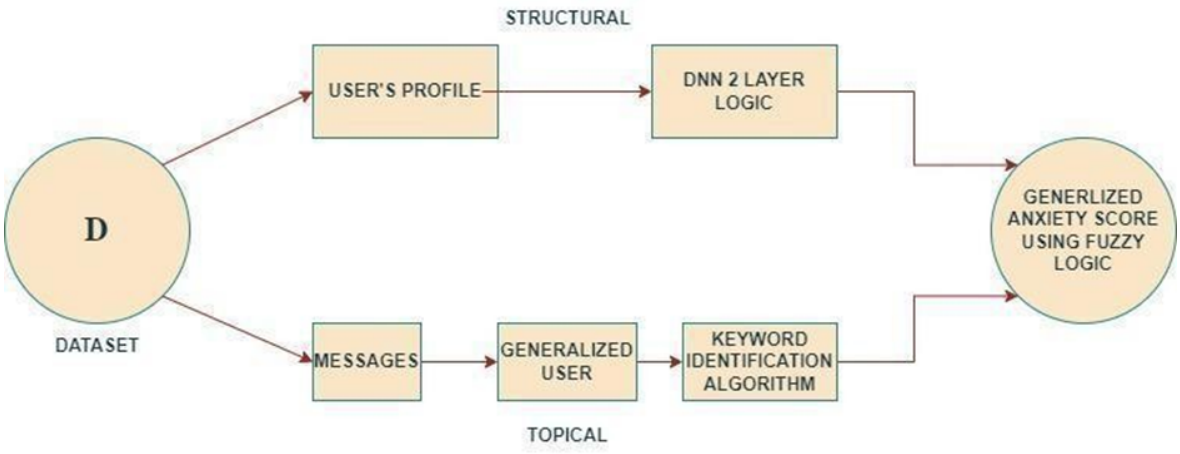

Figure 3.2: Public Anxiety Estimation Framework

From the data, we started estimating the process stress and stress in the region. There is a user profile for Stress Transactions where we get certain features such as age, location, gender. Then we create a deep neural network for our model. Deep neural networks (DNN) are a type of artificial neural network (ANN) with multiple layers of input and output [8]. A deep neural network (DNN) is an artificial neural network (ANN) with multiple layers of input and output. The network we are going to build will use the sigmoid function. We will use this in test layer 2. The only two possible outputs in the data are 0 and 1, and the sigmoid function limits the output to a range of 0 and 1.

Probability functions give you the probability of an event occurring. Of the data, only two possible values are 0 and 1, and the Bernoulli distribution is a distribution with two possible values. The sigmoid function is a good choice if your problem follows the Bernoulli distribution, so we use it in the last layer of the neural network. Since the function compresses the output into a range between 0 and 1, we will use it to predict the result. If the output is greater than 0.5, then we say guess

1. If it is less than 0.5, we say the guess is 0 [9]. For the stress level of a user participating in a discussion of a topic, we measure the stress level by reviewing all the data and figuring out how many times a particular topic (for the person's use) occurs across all documents, counting the occurrences of the topic.

3.3 Data Flow Diagram

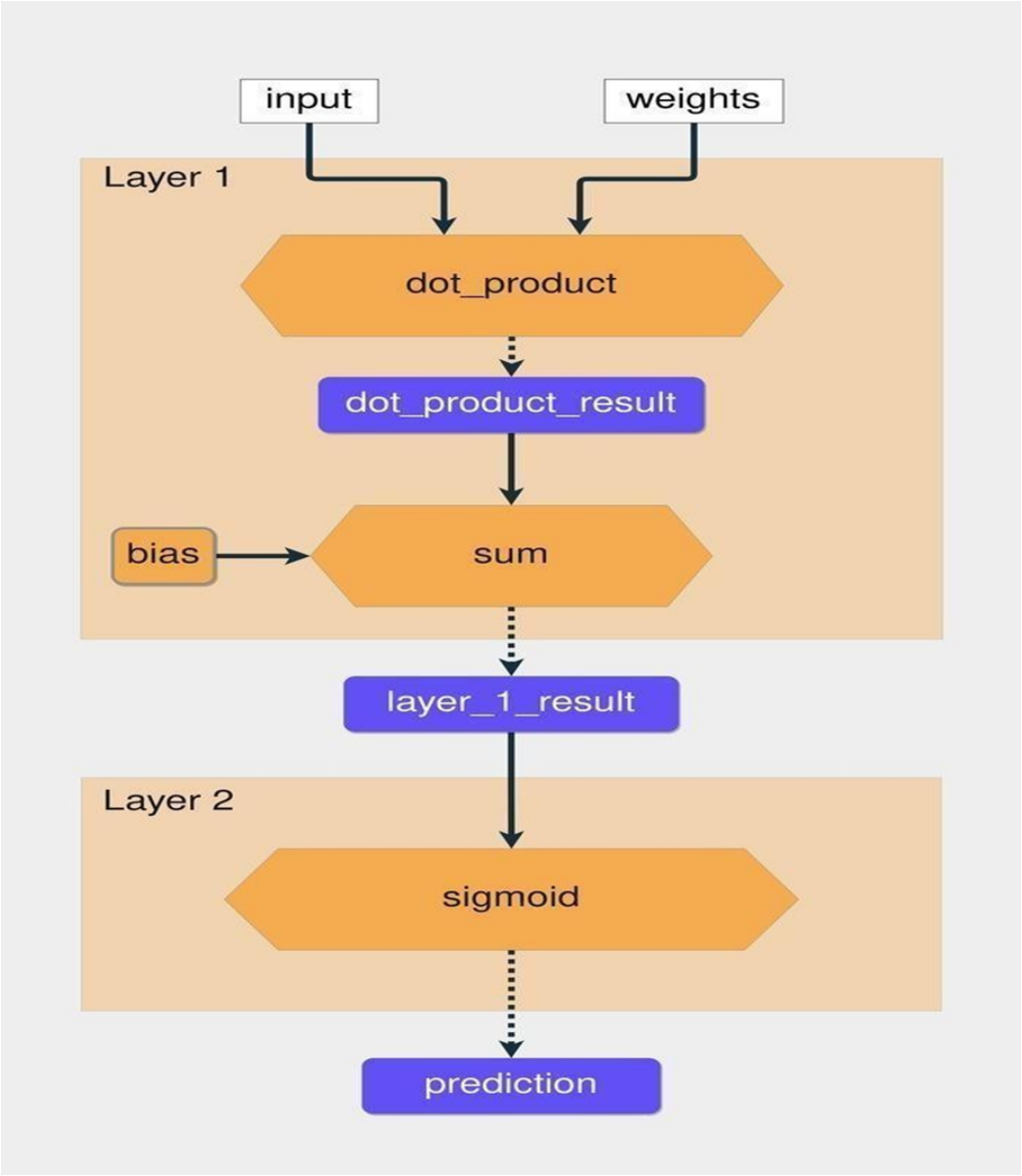

Figure 3.3: DNN 2layer Logic

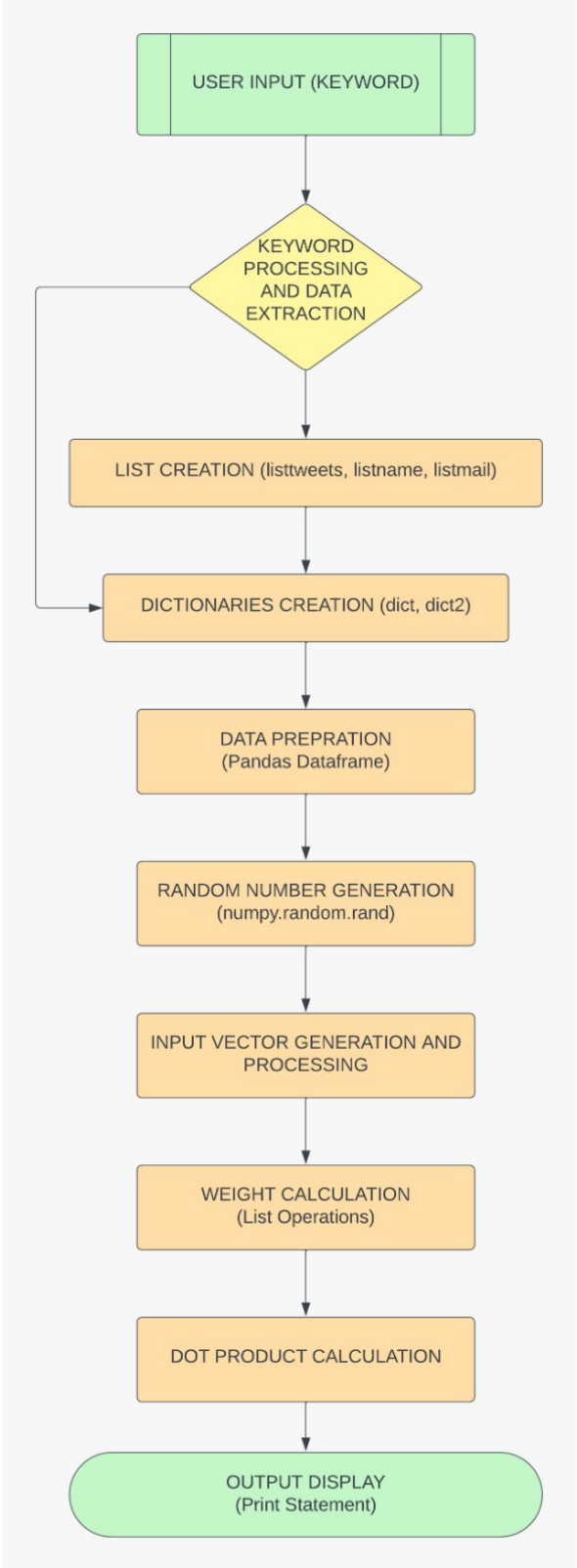

Figure 3.4: Overall Working

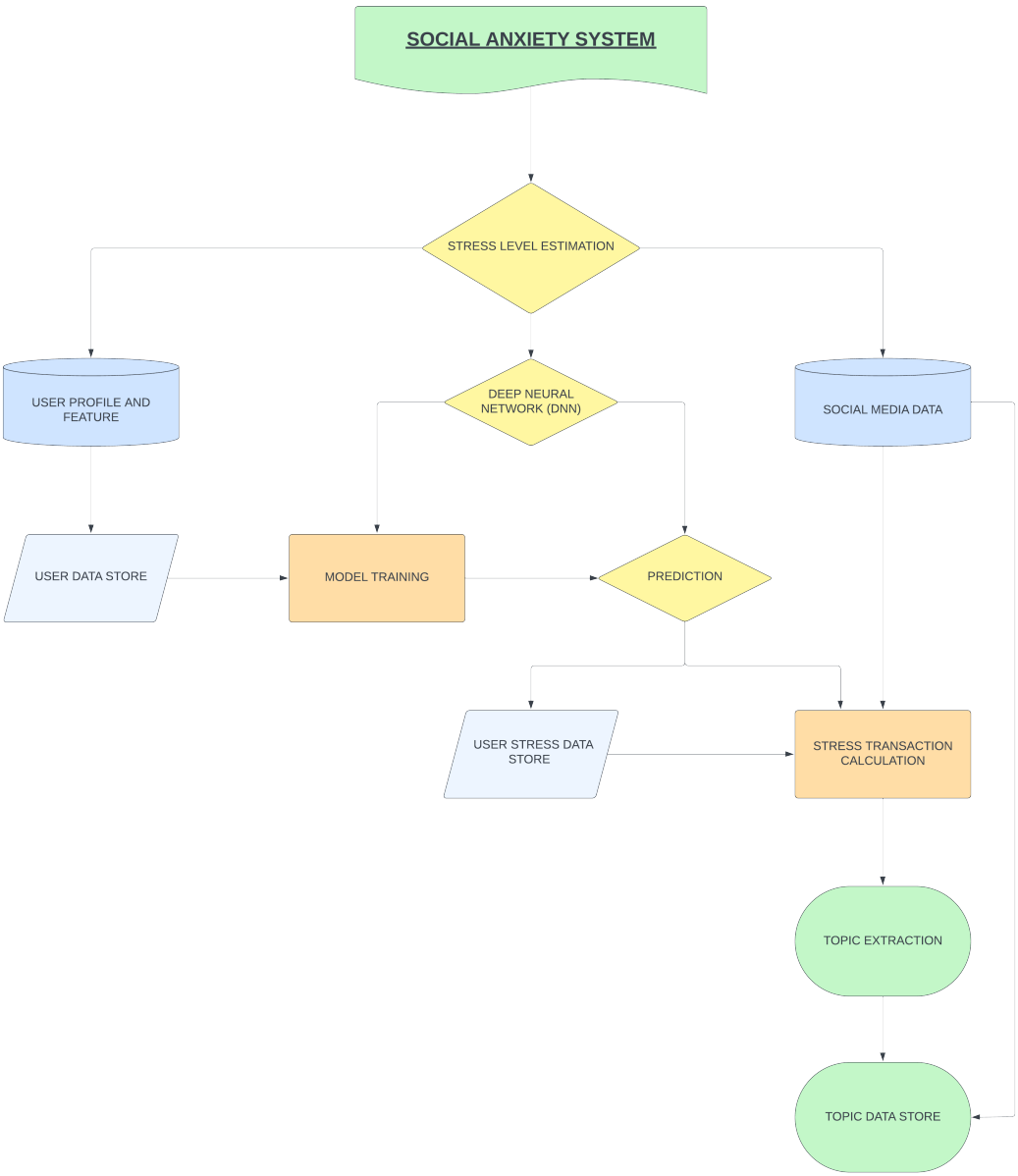

Figure 3.5: Level 1 DFD

3.4 Formulation

Basically after calculating anxieties of particular topic given to communities , we applied DNN 2-Layer Logic

i. Firstly, we calculate the Lower Range of U

$$\alpha = \frac{-1}{\sqrt{U}}$$

ii. We calculate the Higher Range of U

$$\beta = \frac{1}{\sqrt{U}}$$

iii. We Choose a random Number N between 0 to 999

$$N = Rand\ (1000)$$

iv. We calculate the Scaled Value using a Lower Range, Higher Range and N

$$Scaled = \alpha + N * (\beta - \alpha)$$

v. This is the Sigmoid Function that is Used in Calculating Layer-2

$$\sigma(x) = \frac{1}{(1 + e^{-x})}$$

vi. These are the Formulas to calculate Layer-1 & Layer-2

$$Layer\ 1 = u.W + bias$$

$$Layer\ 2 = \sigma\ (Layer\ 1)$$

Figure 3.6: Formulation

Where,

$$\alpha = Lower\ Range$$

$$\beta = Higher\ Range$$

$$N = Random\ Numbers$$

$$U = Length\ of\ Input$$

$$(x) = Sigmoid\ Function$$

$$W = Scaled.mean()$$

$$u = List\ Anxiety\ Count$$

Figure 3.7: Variables

Formulation refers to the process of creating and preparing a specific composition or recipe, often involving the precise combination of ingredients or components to achieve a desired product or result.

3.5 Data Set

We have picked the twitter dataset as our base to calculate the public concern of whole community as well as the particular user anxiety. In dataset there are three fields tweet, email and phone. When we provide our dataset to our DNN model it will give the structural as well topical anxiety of the community and by this we can predict which group or community has greater anxiety as compared to other groups in terms of their messages and comments.

```
                                                  tweet  label
0     I just don’t take my baby out because it gives...      1
1     Suicide figures are up 200% since lockdown. \n...      1
2     she has really been feeding us this week https...      0
3     I can confirm that yes, I do need to stay on m...      1
4     Today is pie day! Celebrate with your "I Ate P...      0
..                                                  ...    ...
995   Dementia, support for carers, electrical fault...      1
996   My view? \n\n'Africa needs more of @AbiyAhmedA...      0
997   This is the 3 year anniversary of adopting Ms....      0
998   “Our Young Addicts” story - How did we get HER...      0
999                  pain lol https://t.co/AKGL15Scy9        1

[1000 rows x 2 columns]
{'anxiety': 61, 'hello': 1, 'baby': 6, 'bye': 3, 'depression': 33}
['anxiety', 61, 0.5865384615384616, 'hello', 1, 0.0096153846153846
[{'topic': 'anxiety', 'count': 61, 'score': 0.5865384615384616}, {
       topic  count     score
0    anxiety     61  0.586538
1      hello      1  0.009615
2       baby      6  0.057692
3        bye      3  0.028846
4  depression     33  0.317308
       topic  count     score
0    anxiety     61  0.586538
4  depression     33  0.317308
2       baby      6  0.057692
3        bye      3  0.028846
1      hello      1  0.009615
```

Figure 3.8: Dataset

Chapter 4

Requirements

4.1 Hardware Requirements

1. Central Processing Unit (CPU) — IntelCore i3 8th Generation.
2. RAM-4 GB minimum.
3. Graphics Processing Unit (GPU) — NVIDIA GeForce GTX 960 or better.
4. Operating System— Ubuntu or Microsoft Windows 10.

4.2 Software Requirements

1. Pycharm, Jupyter Notebook
2. Python 3.7 (and libraries)

Chapter 5

Implementation and Result Analysis

5.1 Implementation

5.1.1 For Topical Anxiety

Firstly we have to read the .csv file using pandas library of python. Then we take some empty lists and fill the list with values of the parameters of .csv file. For eg.- Name, Comment, Id. Now in topical anxiety we have to check a particular keyword commented by the user is how many times in discussion with other users.
Then we calculate the percentage of entered keyword from the entire data-set. By this we can show overall anxiety of particular keyword entered by user in a listed way so that the user can easily compare the anxiety with others anxiety.

5.1.2 For Structural Anxiety

In this we have to find the anxiety of particular community for some predefined keywords. We have taken a set of predefined keywords which we will give to communities after discussing on particular keyword we find the overall anxiety of that community. After that we apply DNN-2 layer logic in which we calculate the higher and lower range of anxieties. Which is discussed above in Formulation section. Create a weight array.

Then we have define two functions first one is sigmoid function and second one is make prediction function. The value calculated from sigmoid function pass to the make prediction function and final overall anxiety of group will displayed though pie chart.

5.2 Result And Analysis

The accuracy of a machine learning classification algorithm is a measure of how accurately the algorithm classifies content. Accuracy is the number of correctly predicted data from all data points. In many ways, it is defined as the number of true positives and negatives divided by the number of true positives, negatives, negatives and negatives. True positive or negative are the points at which the algorithm is classified as true or false, respectively. On the other hand, negative or negative are data points that the algorithm misclassifies.

For example, if an algorithm incorrectly classifies data as correct, that's bad. Oftentimes, true is used in conjunction with another measure, true and false, which uses multiple true/false positives/negatives. Together, these metrics provide detailed information on how the algorithm classifies data items. Therefore, the formula for calculating accuracy is:

$$Accuracy = \frac{TP + TN}{TP + TN + FP + FN}$$

Accuracy is an indicator of the performance of a machine learning model, that is, how well the model predicts. Precision is obtained by dividing the number of true positives by the total number of positive predictions (ie, the number of positives and the number of negatives). For example, in a churn model, the actual metric is, for example, the number of customers predicted to unsubscribe, divided by the total number of customers, for example, predicted to unsubscribe. Therefore, the formula for calculating precision is:

$$Precision = \frac{TP}{TP + FP}$$

Recall is obtained by dividing the number of relevant information provided by the research by the total number of relevant information, while the accuracy is obtained by dividing the relevant information provided by the relevant research by all the information provided by the research. Re-emphasizes the importance of reducing the number of negative cases, such as positive cases classified as bad by the Model. That's why it's important in mission-critical application that wrong quality can cause death or millions of dollars. In these applications, the recovery process should be complete.

$$Recall = \frac{TP}{TP + FN}$$

The F-score, also called the F1-score, is a measure of a model's accuracy on a dataset. It is used to evaluate binary classification systems, which classify examples into 'positive' or 'negative'. The F-score is a way of combining the precision and recall of the model, and it is defined as the harmonic mean of the model's precision and recall. The F-score is commonly used for evaluating information retrieval systems such as search engines, and also for many kinds of machine learning models, in particular in natural language processing.It is possible to adjust the F-score to give more importance to precision over recall, or vice-versa. Common adjusted F-scores are the F0.5-score and the F2-score, as well as the standard F1-score. It can be calculated by the following formula:

$$F1 = 2 * \frac{Precision * Recall}{Precision + Recall}$$

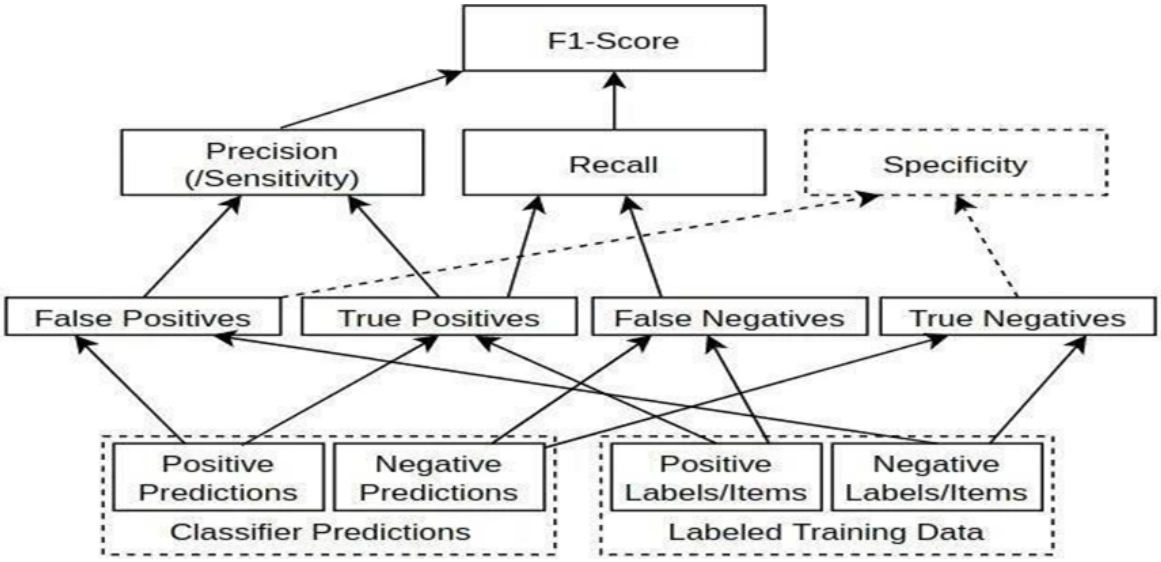

Figure 5.1: F1 Score

where TP = True positive; FP = False positive; TN = True negative; FN = False negative

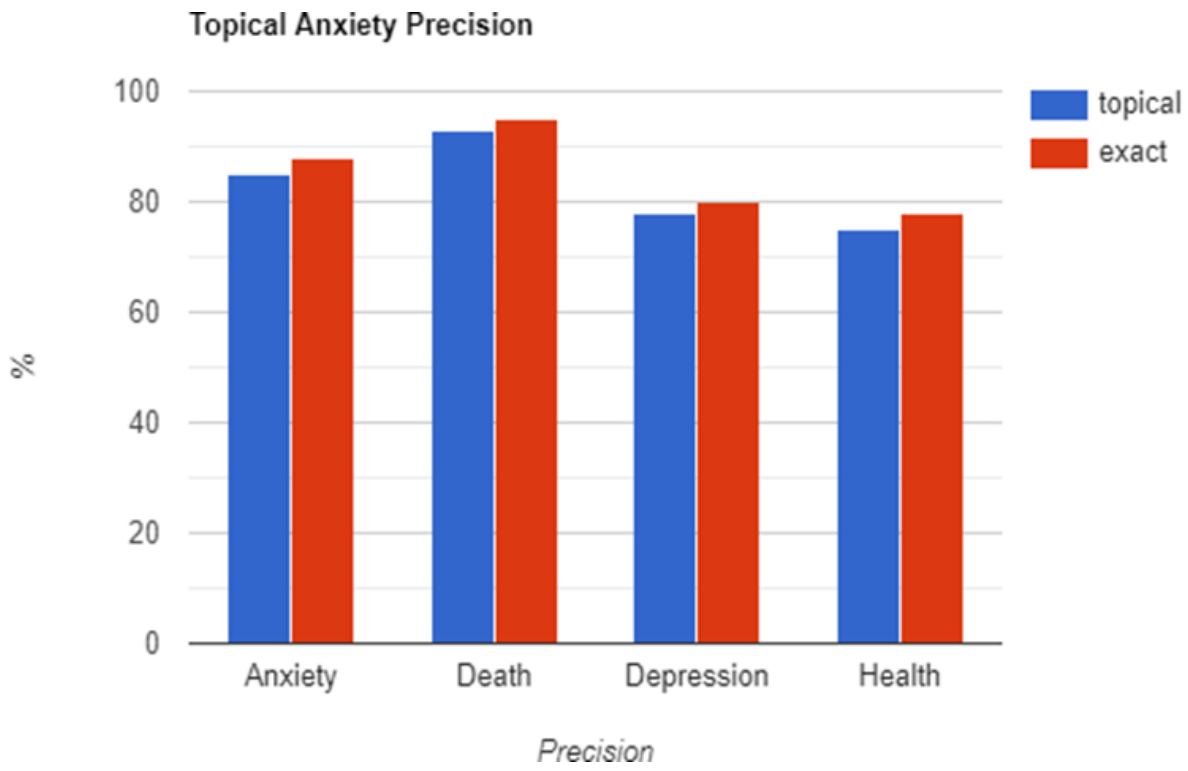

Figure 5.2: Precision of Topical Anxiety

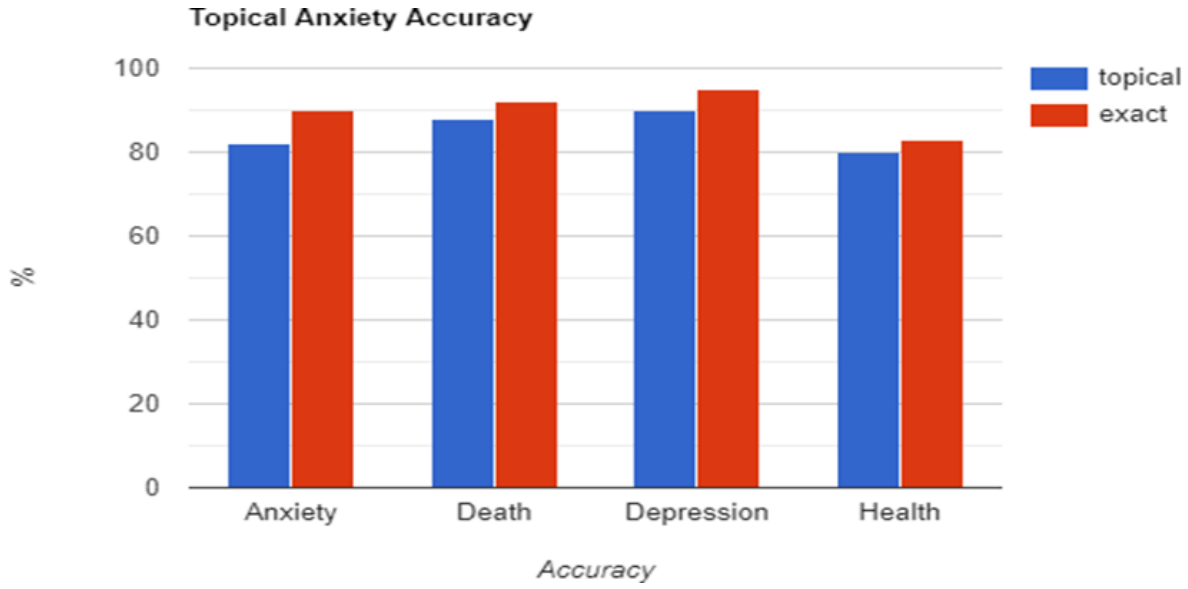

Figure 5.3: Accuracy of Topical Anxiety

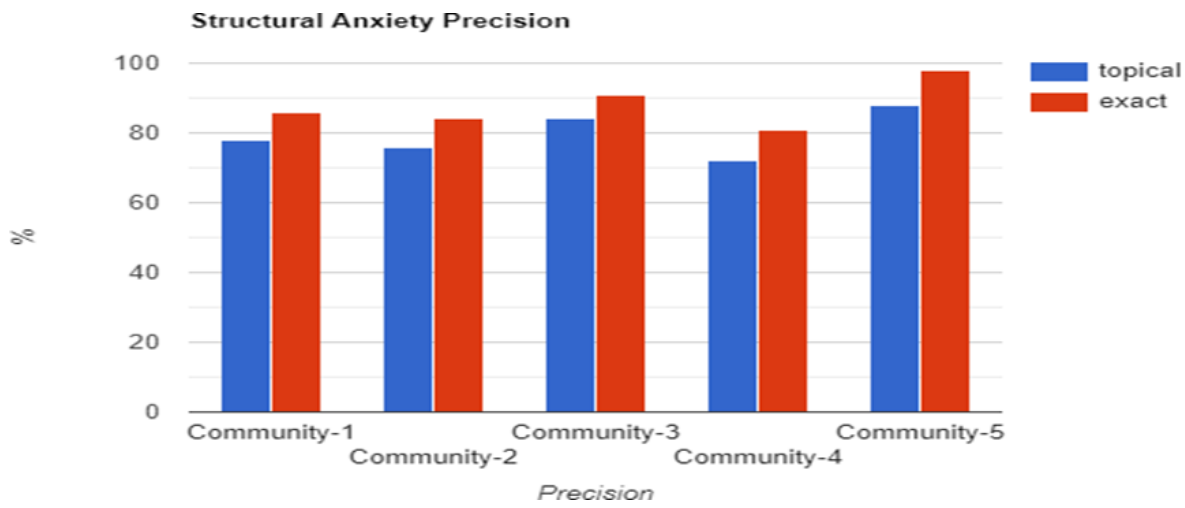

Figure 5.4: Precision of Structural Anxiety

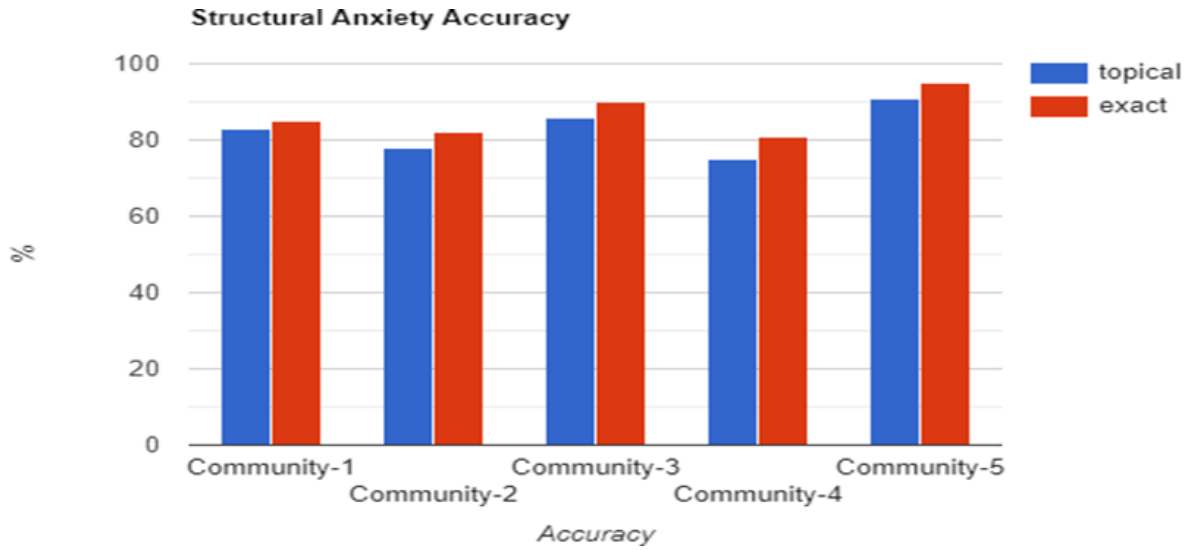

Figure 5.5: Accuracy of Structural Anxiety

We have tested our model in many test cases and also in topical and structural approach.From our analysis and testing we calculated the accuracy and precision of our model that is 88% accuracy and 92% precision and Recall is 84% and F1 score is 87%.

5.3 Comparison

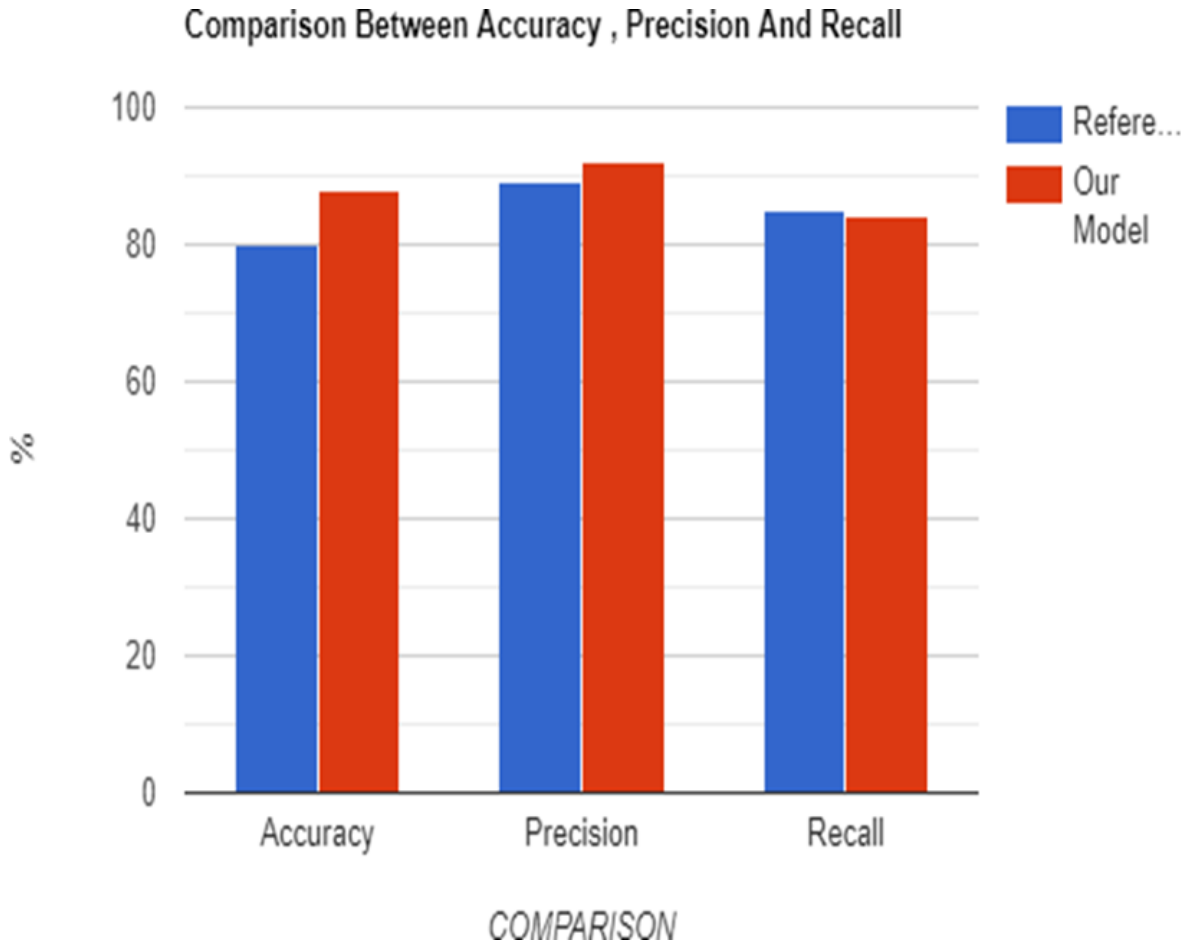

Figure 5.6: Comparison bar Graph

Where Reference represents Evaluating Public Anxiety for Topic-based Communities in Social Networks Accuracy and Precision.
By comparing their model with our model in many test cases we came to know that the accuracy of reference is come out to be 80% , their precision is come out to be 89% and their recall is come out to be 85% and our model's accuracy is came out to be 88% , our models precision is came out to be 92% and recall is 84%.
So from this comparison we came to know that our models precision and accuracy is more correct than other model.

5.4 Outcome

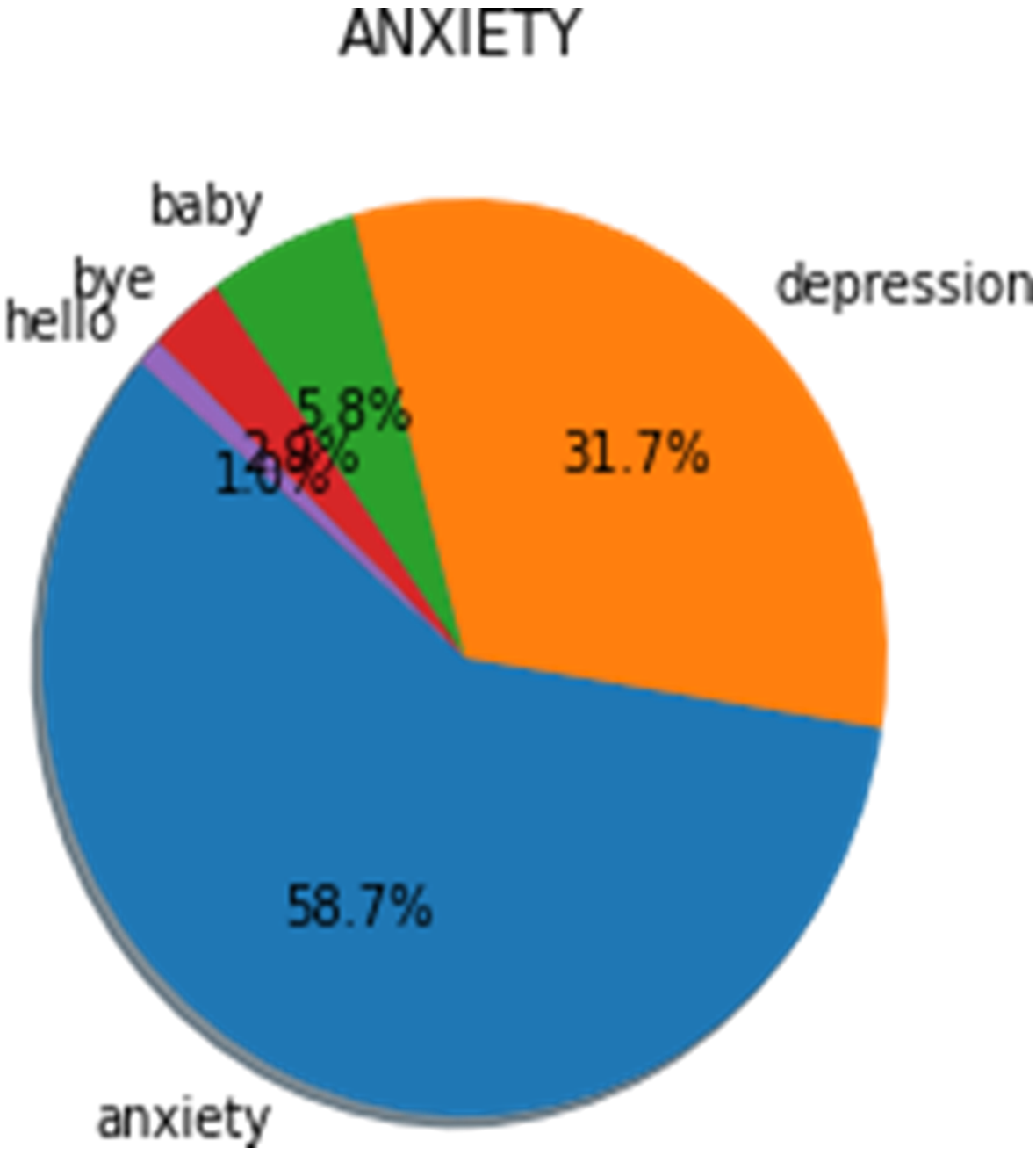

Figure 5.7: Outcome

Chapter 6

Snapshots

1. **Home Page**

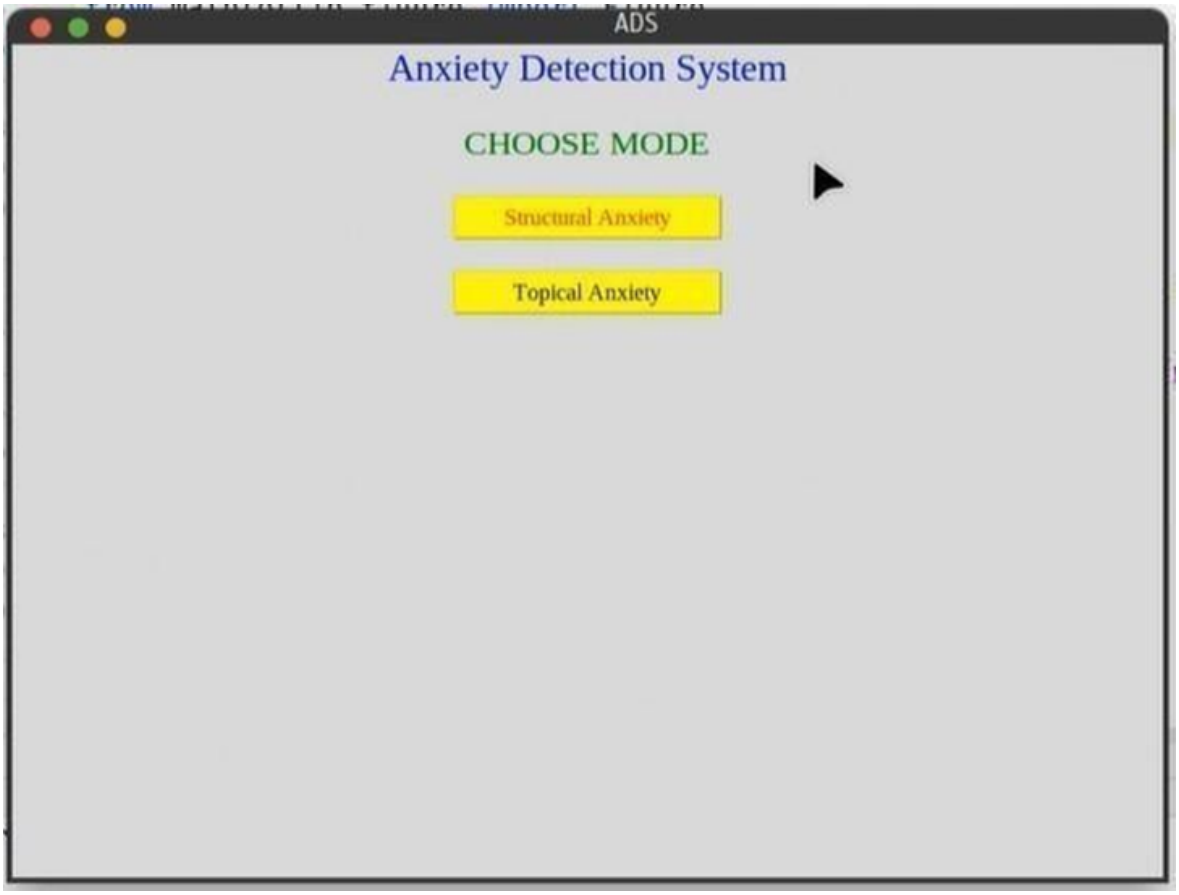

Figure 6.1: GUI of Home Page

2. **Topical Anxiety GUI & Result**

Figure 6.2: Topical Anxiety Front Page

Figure 6.3: Topical Anxiety Result

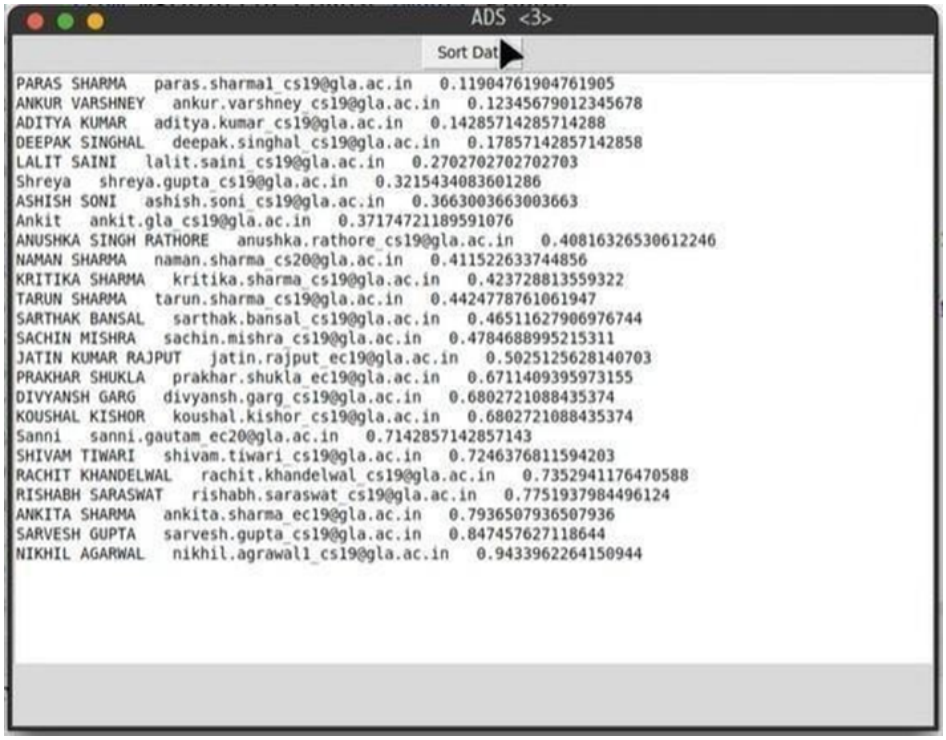

Figure 6.4: Topical Anxiety Sorted Result

3. **Structural Anxiety GUI & Result**

Figure 6.5: Structural Anxiety Front Page

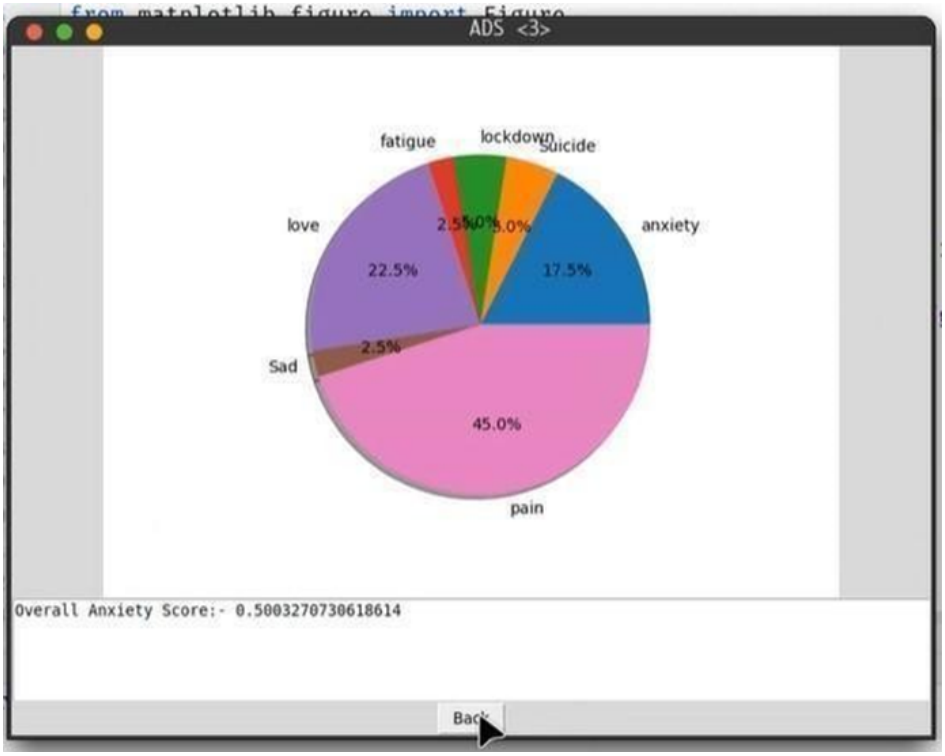

Figure 6.6: Structural Anxiety Result

Chapter 7

Conclusion & Future Scope

7.1 Conclusion

In this research paper, we explore and analyze the problem of predicting social anxiety in social media using fuzzy trees. We develop a framework for predicting issues based on public anxiety levels on social media using both patterns and context. For the sample's stress scores, we recalculated the community's stress scores. In the context of stress scores, we like problem models for evaluating comments and posting social stress scores. We created an MC Tree to estimate the overall stress score in the social network for easy calculation. Likewise, we estimate and measure community pressure by dividing large communities into smaller segments. This model for predicting social media stress scores demonstrates accuracy and precision in real-world data research.

7.2 Future Scope

The future scope of the project on analyzing technology use, mental health, and decision-making processes using fuzzy logic is vast and promising. Given the evolving nature of technology and the increasing complexity of human behavior in digital environments, several areas can be explored to enhance and extend the current research. Here are some potential directions:

1. **Enhanced Behavioral Analysis**

    - **Real-Time Monitoring**: Develop real-time monitoring systems using fuzzy logic to track and analyze user behavior on social media platforms. This can help in early detection of stress, anxiety, and depression, providing timely interventions.
    - **Cross-Platform Analysis**: Expand the analysis to include multiple social media platforms and communication tools. This will provide a more comprehensive understanding of user behavior and mental health across different digital environments.

2. **Integration with Advanced Machine Learning Techniques**

    - **Hybrid Models**: Combine fuzzy logic with other machine learning techniques, such as deep learning and reinforcement learning, to improve the accuracy and reliability of behavioral predictions and decision-making processes.
    - **Adaptive Algorithms**: Develop adaptive algorithms that can learn from user interactions over time, continuously refining the models to better understand and predict user behavior.

3. **Personalized Interventions**

   - **Customized Feedback Systems**: Implement personalized feedback systems that use fuzzy logic to provide tailored advice and support to users based on their behavior and mental health status. This can include personalized mental health resources, coping strategies, and behavioral recommendations.
   - **Therapeutic Applications**: Collaborate with mental health professionals to create therapeutic applications that use fuzzy logic to guide users through customized mental health exercises and monitor their progress.

4. **Expansion to Other Demographics and Contexts**

   - **Diverse Populations**: Extend the research to include diverse populations, such as different age groups, cultural backgrounds, and occupational sectors. This will help understand how technology use and mental health dynamics vary across different demographics.
   - **Workplace and Educational Settings**: Apply the research framework to workplace and educational settings to analyze how technology use impacts stress, productivity, and overall well-being in these contexts.

5. **Longitudinal Studies**

   - **Extended Observation Periods**: Conduct longitudinal studies to observe changes in technology use and mental health over extended periods. This will provide insights into long-term effects and trends.

- **Impact of Technological Advancements**: Study the impact of emerging technologies, such as virtual reality, augmented reality, and AI-driven platforms, on user behavior and mental health.

6. **Enhanced Decision Support Systems**

- **Comprehensive Risk Assessment**: Develop more comprehensive risk assessment models that incorporate fuzzy logic to evaluate various factors affecting decision-making processes, such as emotional states, environmental conditions, and social influences.
- **Policy and Regulation Support**: Create decision support systems to assist policymakers and regulators in developing guidelines and policies that promote healthy technology use and mental well-being.

7. **Collaboration and Interdisciplinary Research**

- **Interdisciplinary Approaches**: Encourage interdisciplinary collaboration among computer scientists, psychologists, sociologists, and healthcare professionals to enrich the research and develop holistic solutions.
- **Global Research Initiatives**: Participate in global research initiatives to share knowledge, data, and best practices, fostering a collaborative environment for addressing the challenges related to technology use and mental health.

Chapter 8

Summary

This research project explores the relationship between technology use, stress, aggression, and social anxiety among university students, utilizing fuzzy logic for comprehensive analysis. The literature review highlights fuzzy logic's role in decision support processes and product risk classification, aiming to understand how various dimensions of technology usage impact students' psychological well-being.

The study examines online relationships and social media behavior, focusing on differences between depressed and non-depressed Twitter users. Machine learning is applied to predict risky behaviors, such as suicide attempts, through electronic medical records analysis. The project also develops the Multidimensional Social Anxiety Scale for Social Media Users (SAS-SMU), validated with data from 684 students, measuring anxiety in four dimensions: shared content anxiety, privacy concerns, emotional stress, and self-evaluation.

Challenges in managing large datasets for real-time decision-making are addressed, emphasizing the need for efficient data management. The research investigates online learning, revealing a strong relationship between course providers, companies, and students. It highlights the importance of comprehensive data collection for improving learning management systems and evaluating student performance.

The impact of technology on students' aggression and anxiety is analyzed using fuzzy logic. Variables like technology use and communication are

examined to understand their influence on behavior. Fuzzy logic resolves biases and uncertainties, leading to reliable models for evaluating communication feedback.

In road safety and driver behavior analysis, the study uses fuzzy logic to propose a decision-making model integrating safety and crash reduction. It assesses drivers' emotions and predicts responses to changing conditions, promoting safer driving practices. The research also explores machine learning in psychiatry, analyzing brain activity, behavior, and genetics to redefine mental disorders based on biological factors. This approach could lead to personalized predictions for early detection and treatment, reducing the burden of mental illness.

Fuzzy logic, introduced by Lotfi A. Zadeh in 1965, processes vague or ambiguous data, making it suitable for various applications. It has been successfully used in fields like control system engineering, image processing, and industrial automation. The theory's adaptability has led to numerous patents and research publications.

Future scope includes expanding fuzzy logic applications, integrating advanced machine learning techniques, and conducting longitudinal studies to track technology use and mental health changes. Interdisciplinary collaborations could enhance the research framework, offering a holistic approach to understanding technology's psychological impacts. The findings can inform public policy and educational programs, promoting healthy technology use and mitigating digital media's adverse effects on mental health. This research has the potential to create a positive societal impact by fostering a healthier relationship with technology for future generations.

Bibliography

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Appendix: CVs

1. Kashish Chandani Resume

Kashish Chandani

github.com/Kashish-29 linkedin.com/in/kashish-chandani/ 294.chandanikashish@gmail.com 8869978335

Education

Ajay Kumar Garg Engineering College, Ghaziabad 2020-24
B.Tech in Computer Science and Engineering with Artificial Intelligence and Machine Learning Current GPA: 9.11/10

Ryan International School, RaeBareli March'19
Inter

Ryan International School, RaeBareli March'17
Highschool

Relevant Coursework

Courses: Artificial Intelligence Primer Course by Infosys, include¡her¿cohort 2.0 by Microsoft Azure, Developer Virtual experience program by Accenture, 30days of Machine Learning by Pantech Solutions

Achievements

Smart India Hackathon'23

- Recognized as a finalist in Smart India Hackathon'23, showcasing exceptional problem-solving skills and innovation. Unified platform creation for MoSJE-supported facilities, enhancing counseling and de-addiction data management, improving beneficiary support efficiency.
- Created a site optimizing Nasha Mukti services analysis at patient, center, and state levels, enhancing accessibility and effectiveness.

Skills

Languages: C/C++, Java, Python, JavaScript, HTML/CSS, SQL
Tools: Figma, Google Collab, Git/GitHub, VS code
Libraries: Pandas, NumPy, Matplotlib, Scikit-learn, Seaborn, Opencv

Projects

Portfolio | *HTML, CSS, JavaScript,* July'23

- It provides engaging features such as smooth transitions, interactive elements, and dynamic content loading, enhancing user engagement.

ChatBot | *Collab, Numpy, Torch, AutoModelForCausalLM, AutoTokenizer from transformers* April 2023

- Created program specially designed to simulate human conversation and provide automated responses or assistance to users via text-based interactions.

Handwritten Digit Recognition | *Numpy, Sklearn, Colab* Jan'23

- A sophisticated machine learning system designed to accurately predict handwritten digits.
- Leveraging a combination of cutting-edge algorithms, this model has achieved remarkable results, boasting an impressive accuracy rate of up to 99.55.
- It is able to distinguish and correctly classify digits

E-Commerce Website: THRIFT by Kashish | *HTML, CSS, JavaScript, VS Code*July'22

- The website offers users a seamless and intuitive online retail experience, combining an appealing visual design with user-friendly navigation.
- Shoppers can easily browse a wide range of products, add items to their cart, and place their order.

Experience

Utopian Dreams pvt. ltd. | *Quality Assurance Engineer* Feb'2024-Present
Ensuring that the applications meet specified quality standards, user expectations before they are released.

Sync-Interns | *Machine Learning Intern* May'23
Managed numerous machine learning projects throughout the duration of my tenure.

Google Developer Students Club | *Member* Dec'2021
Managed a dynamic team of 45 professionals and skillfully coordinated large-scale events with audiences surpassing 100 attendees.

Renaissance-Akgec | *Orator, Manager, Writer* Dec'2021
Supervised a team of 40 individuals while also demonstrating my public speaking skills in various collegiate-level events.

Coding Platforms

Leetcode *Kashish2031225* | *300+ questions solved*

HackerRank *Kashish2031225* | *5 star for java*

2. Sanskar Agarwal Resume

SANSKAR AGARWAL

Ajay Kumar Garg Engineering College , Ghaziabad-201009

@ sanskarg1008@gmail.com (+91) 7906437574 in linkedin.com/in/sanskar-agarwal-26a011204

EXPERIENCE

Data Analytics and Visualization Virtual Experience

Accenture

April 2023 – May 2017

- Project Understanding
- Data Cleaning Modeling
- Data Visualization Storytelling

PROJECTS

Tic Tac Toe

Self-Learning Project

October 2021 – December 2021

- Game using Python.
- 2 players game by marking their position.

Electricity Billing System

Self-Learning Project

January 2023 – March 2023

- User can Create his Personal login for security purposes.
- User can Add customers and Calculate their Electricity Bill.
- User can Pay Electricity Bills.
- User can Generate Bill.
- This Java application was created using Intelli J . Additional library was added for the support of JDBC (Required to setup the connection between the Database and Java Application). It contains 9 different classes which works together to create a better user experience .

EDUCATION

B.Tech in Computer Science Engineering

AKGEC - Ghaziabad

November 2020 – Present CGPA:7.70

Class XII

Blue Bird Sr.Sc.School

June 2019 82.40%

Class X

Blue Bird Sr.Sc.School

June 2017 CGPA:8.50

SKILLS

C/C++ Python HTML JAVA CP

COURSEWORK

- Data Structures and Algorithms
- Software Engineering
- Engineering Mathematics I & II
- Operating Systems
- Database Management Systems

POSITION OF RESPONSIBILITY

- Event Head- nior,was one of the managerial events of ISTE 2023.

ACHIEVEMENTS

- Pupil at CodeForces
- 3 Star at CodeChef
- More than 250 question on Leetcode.

3. Tarun Kumar Resume

Tarun Kumar

tk16634@gmail.com |LinkedIn| +91-8355052481

Education

- Bachelor of Technology in Computer Science (Artificial Intelligence and Machine Learning),
  Dr. A.P.J. Abdul Kalam Technical University

- Diploma
  ARYAVART INSTITUTE OF TECHNOLOGY
  AND MANAGEMENT LUCKNOW, Electrical Engineering (polytechnic)
  (Hons. Degree), **percentage** :- 80.39, 08/2019 - 07/2021.

- Senior Secondary
  Lucknow Public School, Lucknow , Uttar Pradesh, India
  Percentage:-75.8, 06/2017-07/2019.

Skills

- **Programming Languages**: HTML, CSS, Python, C/C++
- **Databases**: MySQL.
- **Computer Science Fundamentals**: OOPS, DBMS, Data Structures and Algorithms, Operating system
- **Others:** Team work, Communication, Management, Leadership, Active Listener, Networking, Persuasion.

Projects

- Spotify Clone
  - Designed and developed a Spotify clone using HTML, CSS, and JavaScript, showcasing a comprehensive set of web development skills.
  - Integrated audio playback functionality using HTML5 < audio> elements and JavaScript to enable users to play, pause, skip, and adjust the volume of songs.
- College Website
  - Designed and developed a dynamic and visually appealing college website using HTML, CSS.
  - This project aimed to provide students, faculty, and visitors with a user- friendly platform for accessing essential information and resources related to the college.
- Weather App
  - Developed a responsive weather application using HTML, CSS, and JavaScript, providing users with an intuitive and visu appealing interface to access real-time weather information.
  - Implemented dynamic features that enable users to input locations and receive accurate and up-to-date weather foreca enhancing the overall user experience of the application.
- Estimating public anxiety of social media (Ongoing)
  - Develop a robust system for estimating public anxiety levels in social media platforms through the implementation of fu logic algorithms. The project aims to analyze and interpret user-generated content, incorporating linguistic nuances and contextual information to provide a nuanced and accurate measure of public anxiety

Achievements

- Scored 578 marks in AON co-cubes test.
- Part of college event organizing sports team.
- Pariticipated in 2 CBSE tournaments.

Certification

- Training on PLC programming (11/2020 - 12/2020)
- PLC programming training at CADDESK lucknow

4. Aayush Aggarwal Resume

AAYUSH AGGARWAL

Ghaziabad, UP • 8755272289 • aayush2651@gmail.com
https://www.linkedin.com/in/aayush aggarwal

SUMMARY

A proficient multitasker with a strong work ethic, adept teamwork, problem-solving abilities, and organizational skills. Willing to undertake any task for the betterment of the team. Recognized as a reliable and committed team player, displaying a diligent and resourceful work methodology

- Demonstrates Persistence in Problem-Solving.
- Possesses an Inquisitive Nature that fosters continuous improvement.
- Exhibits a Strong Attention to Detail

PROJECT

SIGN LANGUAGE TRANSLATOR

Led the creation of an innovative virtual translator, enabling effective communication for impaired individuals with the hearing community and vice versa; boosted inclusivity and bridged communication gaps. Technologies used - ML. Pycharm, Django, SQL

HOUSING PRICE PREDICTION MODEL

The Housing Price Prediction Model is a comprehensive data science project aimed at predicting real estate prices using historical data. Developed in Python, this project leverages powerful libraries such as numpy, pandas, and matplotlib to perform data analysis, manipulation, and visualization, providing an accurate and insightful prediction tool for real estate professionals and potential buyers.

ZOMATO DATA ANALYSIS AND PREDICTION

This Zomato Data Analysis project leverages the power of Python and its data analysis libraries, including NumPy, Pandas, Matplotlib, and Seaborn, to gain insights into restaurant trends and customer preferences regarding online delivery and offline services

EDUCATION

B.Tech in Computer Science and Engineering | AI&ML **Dec 2020 - June 2024**

Ajay Kumar Garg Engineering college , Ghaziabad

- Specialization in Artificial Intelligence and machine learning.

WORK EXPERIENCE

Aug 2021 - Oct2021

Python developer intern

ShapeMySkills Pvt. Ltd , noida

- Gained practical experience by working in diffrent industrial projects.
- collabrated with a team of professionals

TECHNICAL SKILLS

- **Programming Languages:** Python, C, SQL, Javascript.
- **Libraries**: Numpy, Scipy, Scikit-learn, TensorFlow, Keras, PyTorch.Pandas, Matplotlib.
- **Tools**: HTML, CSS, Microsoft Office, Microsoft Power BI, Tableau,Django

5. Aaryan Sahlot Resume

Aaryan Sahlot

+91-8826770500
sahlotaaryan@gmail.com
GitHub Profile
LinkedIn Profile

Education

•Ajay Kumar Garg Engineering College, Ghaziabad *2020-24*
Bachelor of Technology in Computer Science and Engineering (AI and ML) CGPA: 7.982

•Dehradun Public School, Ghaziabad *2019-20*
Intermediate Percentage: 93.8

•Dehradun Public School, Ghaziabad *2017-18*
High School Percentage: 84.8

Personal Projects

•DESHAATAN, The Tourism Guide App *Nov, 2022*
An Android Application Build in Android Studio.

- The motive of this app is to provide best tourism experience around India.
- Tools & technologies used: Java Programming Language, Android Studio, Android App Development
- Deshaatan Application GitHub Link

•My Lucky Number Application *July, 2023*
An Android Application Build in Android Studio.

- Discover Your Luck! Get your unique lucky number instantly with just your name. Share your lucky number on Gmail, Drive, WhatsApp, Telegram, and more.
- Tools & technologies used: Java Programming Language, Android Studio, Android App Development
- My Lucky Number Application GitHub Link

•Hindi Teacher App *July, 2023*
An Android Application Build in Android Studio.

- Your ultimate companion for learning the vibrant colors of the rainbow in Hindi! This user-friendly and compact application offers a seamless experience of translating and pronouncing the colors of the rainbow, namely Violet, Indigo, Blue, Green, Yellow, Orange, and Red.
- Tools & technologies used: Java Programming Language, Android Studio, Android App Development
- Hindi Teacher Application GitHub Link

•DOCOMO The Doctors App *Aug, 2023*
An Android Application Build in Android Studio.

- With an intuitive interface, the app categorizes doctors into various specialties, ranging from highly skilled physicians and neurologists to ENT specialists, dentists, ophthalmologists, orthopedists, and gastroenterologists.
- Tools & technologies used: Java Programming Language, Android Studio, Android App Development
- DOCOMO The Doctors Application GitHub Link

Technical Skills and Interests

Languages: Python, Java, SQL, HTML, Java Script, CSS
Developer Tools: Android Studio, GitHub, VS Code, pgAdmin
Cloud/Databases: Relational Database(MySQL)
Soft Skills: Visual and Auditory Learner, Problem Solving, Management
Interests: Coding, Drawing, Teaching, Playing Outdoor Games, Gathering Knowledge and Learning new Skills

Coursework and Certificates

•The Complete Android 14 Developer Course - Build 100 Apps *Udemy Certificate Link*
Aug, 2023

•The Complete SQL Bootcamp: Go from Zero to Hero *Udemy Certificate Link*
Aug, 2023