

# Efficiently Use Search Algorithms in Implementation of Emotional Classification

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## Why is a Searching Algorithm Needed in Classification Problems?

### Introduction

In the race towards sentience, people often wonder about the current state of how Artificial Intelligence (AI) perceive and interprets the idea behind emotions. It was one of the key factors towards understanding the current state of roadblocks that AI presents in mimicking how the Human Brain function. A question arise as to whether, we can simulate the idea behind how we humans perceive emotions using contextual analysis and creation of basic understanding of emotions in a simple form using Classification solutions and Algorithms with a searching algorithm that will be able to find the best possible emotion that the AI can relate to based on the given context.[1]

## What is a Searching Algorithm?

A Search Algorithm is the modern standard for information control as the world is creating more and more information and sorting them through for retrieval is a tedious process without the use of algorithms. Search is a fundamental process in data processing. The process involves finding a certain value in a set of values that is of the same type to prepare the data for processing. In the search process, the methods used vary depending on the methods used. [sorting'algorithm]

The most common search algorithms are the Linear Search and the Binary Search. The Linear Search is the most basic search algorithm that is used to find a value in a set of values. The Binary Search is a more advanced search algorithm that is used to find a value in a set of values that are sorted in a specific order. The Binary Search is more efficient than the Linear Search as it is able to find the value in a shorter amount of time.[sorting'algorithm'comparison]

## Comparison of Different Method for Searching a Word Dictionary

Searching the dictionary is a process that requires finding the exact case, characters, letters and sequence of the word in the dictionary. Among the different forms of searching algorithms, the Linear Search or Sequential Search and the Binary Search are the most common algorithms used in searching for a word in a dictionary. The Linear Search is the most basic search algorithm that is used to find a value in a set of values. The Binary Search is a more advanced search algorithm that is used to find a value in a set of values that are sorted in a specific order. The Binary Search is more efficient than the Linear Search as it is able to find the value in a shorter amount of time.[sorting'algorithm'comparison] Given that our

dataset is a set of value that is already sorted through since it was a dictionary, the Binary Search is the most efficient algorithm to use.

However, searching algorithms works mostly with the values associated with integers rather than characters right? So how do we use it in a dictionary? Well, we can use the ASCII value of the characters to compare the characters in the dictionary. The ASCII value of the characters are just integers that represent a values under the hood. See [[ascii reference](#)] for more information about ASCII values.

## Linear Search

In a common use, linear search is a set of values that are not sorted in any particular order. The algorithm will start from the first value and compare it to the value that is being searched for. If the value is not found, the algorithm will move on to the next value and compare it to the value that is being searched for. The algorithm will continue to do this until the value is found or the end of the set of values is reached. If the value is found, the algorithm will return the index of the value.[[linear search](#)]

## Binary Search

In a common use, binary search is a set of values that are sorted in a specific order. The algorithm will start from the middle value and compare it to the value that is being searched for. If the value is not found, the algorithm will check if the value is greater than or less than the value that is being searched for. If the value is greater than the value that is being searched for, the algorithm will move on to the next value and compare it to the value that is being searched for. If the value is less than the value that is being searched for, the algorithm will move on to the previous value and compare it to the value that is being searched for. The algorithm will continue to do this until the value is found or the end of the set of values is reached. If the value is found, the algorithm will return the index of the value. If the value is not found, the algorithm will return an error that shows it was not found.[[binary search](#)]

## Application of Searching Algorithms in Word Searching Problems

Searching algorithms are used in word searching problems. In word searching problems, the algorithm will search for a word in a set of words. The algorithm will start from the first word and compare it to the word that is being searched for. If the word is not found, the algorithm will move on to the next word and compare it to the word that is being searched for. The algorithm will continue to do this until the word is found or the end of the set of words is reached. If the word is found, the algorithm will return the index of the word. If the word is not found, the algorithm will return an error that shows it was not found.[[word searching](#)]

## References

- [1] Verma R. Nandwani P. *"A review on sentiment analysis and emotion detection from text."*. 2021. DOI: 10.1007/s13278-021-00776-6.