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Editorial

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From the Editor

I am honored to present Volume 3, Issue 3 of the *Machines and Algorithms* journal. The papers are thoughtfully selected to reflect the interests of our audience in both theoretical and applied areas of Computer Science. This issue features contributions in key domains such as Artificial Intelligence, Machine Learning, Image Processing, Algorithmic Optimization, IoT, and other emerging technologies shaping the future of computing.

In this issue, quality research articles have been compiled following a rigorous peer-review process. I sincerely want to thank all the authors for their valuable contributions and express appreciation to the reviewers for their dedicated and meticulous efforts. A short overview of the selected papers is discussed below.

The paper "Min Max Merge: A Novel Comparison based Sorting Technique for Data Intensive Processing" introduces a novel comparison-based sorting algorithm called Min-Max Merge Sort, which improves sorting efficiency. The algorithm combines the groups of numbers into one group. The idea was to divide the input values into multiple groups and then recursive merging based on minimum and maximum values. This prevented unnecessary data shifts and comparisons. The speed is comparatively faster in comparison to the traditional sorting methods. Space complexity also does not exceed O(n). The comparison between different methods show that it has outperformed recent sorting algorithms.

The paper "Development and Advantages of an AI-Driven Smart Lighting, Insect Detection and Automatic Spray System for Precision Agriculture" discusses about an AI-driven intelligent lighting and insect detection system designed to optimize pesticide use and enhance crop yield in agriculture. The CNN detection correctly detects insects with an accuracy of 95% which reduces the use of pesticides to 40% in comparison to the traditional methods. The concept of smart lighting uses HPS lamps which provides best lightening conditions enhancing photosynthesis to raise yield of the crop to 25%. The proposed system only sprays when and where needed to minimize environmental effects and pollution.

The paper "A Framework for the Authorship Identification in Research Papers" proposes an authorship identification and plagiarism detection. This study uses stylometric traits to determine authorship and plagiarism without using external sources. This indicator includes the writing style, language and sentence structure to assign part of documents with the authors. Clustering technique is used to estimate the number of times an author is used in a manuscript which will solve unethical authorship attributions and plagiarism. The results showed that this method is capable of detecting multi-author contributions and non-digital plagiarism.

The paper "Market Basket Data-Mining Analysis" explores data mining solutions for analyzing large and sparse sales transaction data, essential for customer-centric marketing. It discusses the challenges of using Association Rule Mining (ARM) on the sparse data and proposes using k-mean clustering and factors like Recency, Frequency and Monetary (RFM) model. This model has been tested on real world dataset and the set basis for future research in multi-label classification and sequence to sequence prediction. Last but not the least, the paper on "Artificial Intelligence in the Education Process" studies the role of technology in education, questioning whether it can fully replace teachers or merely serve as a supportive tool. The study shows that human interaction is necessary in the learning process. While technology is a good tool to manage many aspects in education, its effectiveness depends on the goals and context where it is applied.

This concludes the summary of the papers finalized for this issue. Our team is very committed and works hard to ensure that Machines and Algorithms continues to publish quality research articles on interesting topics. In future, our aim is to expand the journals reach and collaborate with the leading research institutions and maybe introduce special issues on emerging technologies. Your participation and feedback are invaluable in shaping the future of this journal.

I want to thank once again to all researchers and reviewers to make this happen. Hope to see more issues and interesting papers in future.