Plant Disease Prediction using Machine & Deep Learning with Pharmacy Factors

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International Conference

11th September 2024

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[A Unit of Vivekananda Vidyavardhaka Sangha Puttur (R)]

Affiliated to Visvesvaraya Technological University, Belagavi

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PREFACE

Welcome to Drishti 2024, an International Conference organized by Vivekananda College of Engineering & Technology (VCET), Puttur. Since its establishment in 2001 by the Vivekananda Vidyavardhaka Sangha, Puttur, D.K., Karnataka, VCET has been dedicated to fostering academic excellence and innovation. As we gather on 11th September 2024, we are excited to explore and discuss the latest advancements and challenges across Management, Engineering, Science, and Technology.

This year's conference will feature a series of dynamic tracks, each delving into critical areas of contemporary relevance. The first track will focus on contemporary management practices, offering insights into the latest strategies and methodologies that are transforming organizational operations. This exploration will cover innovative approaches to leadership and management, aiming to equip attendees with valuable knowledge on navigating and excelling in today's complex business environment.

Another significant area of discussion will be the advanced technologies in computing and communication. This track will spotlight cutting-edge developments that are reshaping the technological landscape. Participants will gain a deep understanding of emerging trends such as artificial intelligence, machine learning, and advancements in communication networks, along with their profound impact on various sectors and society at large.

Equally important is the track dedicated to sustainable practices in engineering and science. This segment will address the urgent need for integrating sustainability into engineering solutions and scientific research. The focus will be on innovative approaches and strategies that promote environmental stewardship and sustainability, ensuring that advancements in these fields contribute positively to our ecological balance and long-term well-being.

Drishti 2024 aims to create a vibrant forum for interdisciplinary dialogue, collaboration, and the exchange of ideas. We are honoured to host a distinguished group of speakers, researchers, and practitioners who will share their expertise and insights, contributing to a rich and stimulating conference experience.

We extend our heartfelt gratitude to all who have contributed to making this event possible. Your participation and engagement are crucial to the success of Drishti 2024. We look forward to a conference that will inspire and drive progress in these critical areas of knowledge.

Dr. Robin Manohar Shinde, Dr. Jeevitha B.K., Dr. Sowmya N.J.
Conveners, Drishti-2024

Message

Sri K. Vishwas Shenoy
President, Vivekananda College of Engineering & Technology

Dear Conference Participants and Readers

It is with great pleasure that we introduce the International Conference *"DRISHTI – 2024: A New Era in Management, Engineering, Science, and Technology."* The theme of the conference, "DRISHTI," symbolizing vision, reflects our collective commitment to exploring the future of these dynamic fields in a rapidly evolving world. As we navigate the complexities and opportunities of the modern era, it is vital that we embrace a forward-looking approach, leveraging the power of innovation and technology to shape a brighter future.

This conference serves as a platform for participants to showcase their intellectual rigor, creativity, and passion for research across management, engineering, science, and technology. I extend my sincere appreciation to all the authors, volunteers, sponsors, and everyone who has contributed to making this conference a remarkable success.

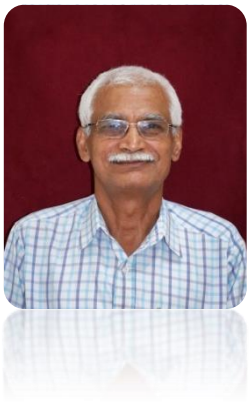
Thank you for your participation and support.

Warm Regards,

Sri K. Vishwas Shenoy
President, Vivekananda College of Engineering & Technology

Message

Sri T.S. Subrahmanya Bhat
Correspondent
Vivekananda College of Engineering & Technology, Puttur



Esteemed Scholars and Readers

The world is evolving rapidly, and with it, the ways we manage and harness technology, engineering, science, and management are also transforming. The DRISHTI conference brings together thought leaders from around the globe, all committed to exploring innovative solutions that apply management, engineering, science, and technology to address the challenges of the 21st century.

We find ourselves in a time of unparalleled opportunity. The intersection of technology, data, and artificial intelligence is unlocking new possibilities for businesses, governments, and individuals. Yet, these opportunities come with their own set of challenges. It is imperative that we develop new strategies to manage risks and make informed decisions in every sphere.

The DRISHTI conference serves as a platform for exchanging ideas and best practices. Here, we will explore the latest advancements in management, engineering, science, and technology, and discuss how these can be utilized to build a better future for all. Together, we have the power to shape a new era – one that is more sustainable, equitable, and prosperous for everyone.

I wish you all a productive and inspiring conference.

Warm Regards,

Sri T.S. Subrahmanya Bhat
Correspondent
Vivekananda College of Engineering & Technology, Puttur

Message

Dr. Mahesh Prasanna K.
Principal
Vivekananda College of Engineering & Technology, Puttur

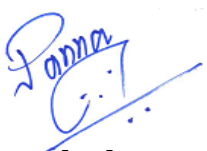
Dear Authors and Readers

In an era where the pace of change is unparalleled, our focus on bridging theoretical knowledge with practical application is more crucial than ever. Drishti-2024, an International Conference which is dedicated to exploring the frontiers of Science, Engineering, and Management serves as a platform for fostering collaboration, sharing insights, and generating solutions that address the pressing challenges of our time.

I congratulate the participants and tireless organizers who have contributed to making this event a success and reality. Your collective efforts ensure that Drishti-2024 not only meets its goals but also sets a new benchmark for future initiatives.

I wish the knowledge and ideas exchanged here lead to pioneering strategies and breakthroughs that will shape the future of Science, Engineering, and Management. Let us work together to build a future that is dynamic, sustainable, and filled with opportunities for growth and success.

Warm Regards,



Dr. Mahesh Prasanna K
Principal
Vivekananda College of Engineering & Technology, Puttur

Message

Mr. Melwyn Sequeira
Co-Founder
Venir International Consultancy, Mangalore

"International Conference DRISHTI is a wonderful opportunity to find new ideas and explore cutting-edge methods that can promote growth and change in management and technology. The varied range of attendees and presentations assures a lively exchange of knowledge, while also providing essential networking chances for experts from many sectors."

Message

Ms. Mayumi Cox
Chief Executive Officer
Team Next LLC, Japan

"DRISHTI-2024 is a remarkable international conference that promotes collaboration among academia, industry, and technology." This event brings together professionals and innovators from around the world to provide new insights on the challenges and possibilities that shape the future. It is an excellent opportunity to broaden horizons, form networks, and inspire answers to complicated global challenges"

Message

Mr. Shijomon Yesudhas
Manager of Business Development (South Asia)
Deakin University, Australia

"DRISHTI brings together industry leaders, educators, and innovators to discuss new ideas in management, engineering, and technology. The conference fosters collaboration and knowledge sharing, laying the foundation for significant partnerships and new solutions that will define the future of global business and education."

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Plant Disease Prediction using Machine & Deep Learning with Pharmacy Factors

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ABSTRACT

The role of machine learning based artificial intelligence methods is more important in the case of agricultural fields. The importance of crop protection is required in agriculture field, to help farmers. Corn_(maize), Potato, Tomato, Cotton, Cassava Leaves have considered for this work, as we know that crop diseases are the major threat to food security. Primer evaluation processes based on 'crop_recommendation.csv' with the help of different supervised machine learning methods. Evaluation processes based on deep learning and it mainly focus on pooling, optimizers and different learning rates based on with or without data augmentation processes. And the prediction process focuses on train, test pair and without these pairs also considered. The proposed algorithm has been evaluated with the crop diseased, healthy images and accuracy detection performed to get efficient prediction using DL and the results compared with the other significant journals. Using a public dataset, which consists of images of corn, potato, cotton, cassava and tomato. In the case of tomato, classification accuracy achieved is 66%, cassava is 77%, together of corn, potato and tomato, the achieved classification accuracy is 99% with the help of feature scaling before CNN model creation. Finally model stacking method used for processing the best classification method among the different parameters of pooling and optimizers. In the case of large image dataset, we faced frequent system crash issue in entire google colab system, to avoid that, we may process feature selection methods in future. The paper done based on fine tuning measures by utilizing machine learning and deep learning techniques exclusively used for plant disease prediction. The paper highlights the crop diseases they focus on, the models employed, sources of data used and

overall performance according to the performance metrics employed for plant disease prediction. Fine tuning based proposed findings indicate that Deep Learning provides the highest accuracy, outperforming existing commonly used disease identification techniques and this high accuracy is required to localize the images accurately.

***Keywords**: Image processing, Machine Learning based Plant disease prediction, CNN based Plant disease prediction*