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Institute Vision

To become a globally recognized institution that develops professionals with integrity who excel in their chosen domain making a positive impact in industry, research, business and society



Institute Mission

- To provide the ambience necessary to achieve professional and technological excellence at the global level.
- To undertake collaborative research that fosters new ideas for sustainable development.
- To instill in our graduates ethical values and empathy for the needs of society.

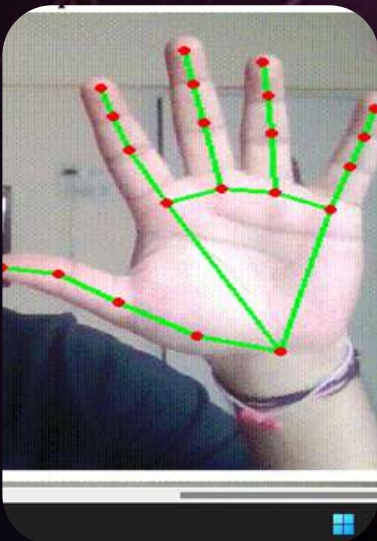
Department Vision

“To become a globally recognized centre of excellence in the field of Information Technology, providing technology excellence that advances learning, teaching, research to produce budding IT professionals, researchers, innovators and entrepreneurs.”

Department Mission

- Produce graduates with the best knowledge and practical skills by imparting innovative skills, research aptitude, ethics, and social responsibility.
 - To create ambience of academic excellence through state of the art infrastructure and learner centric pedagogy leading to employability, and research.
 - Imbibe and in still in them the required qualities to become leaders who can make positive contribution to the society.
 - Enhance the student's knowledge in the latest technologies by organizing and participating in technical programs
 - Interact and work closely with industries and research organizations to accomplish technology transfer
-

YEAR 2023-24



PROTOIT

- **Autonomous Water Hyacinth Detection And Removal System For Water Bodies**
- **Dark Web Cryptocurrency Transaction Monitoring For Illicit Drug Trade Detectiaon With Bio-Inspired Object Recognition**
- **Generative Ai: Text, Image And Audio Generation**
- **The Hybrid Blockchain-Ai Framework For Adapti**
- **Virtual Mouse Control With Hand Gestures**



AUTONOMOUS WATER HYACINTH DETECTION AND REMOVAL SYSTEM FOR WATER BODIES

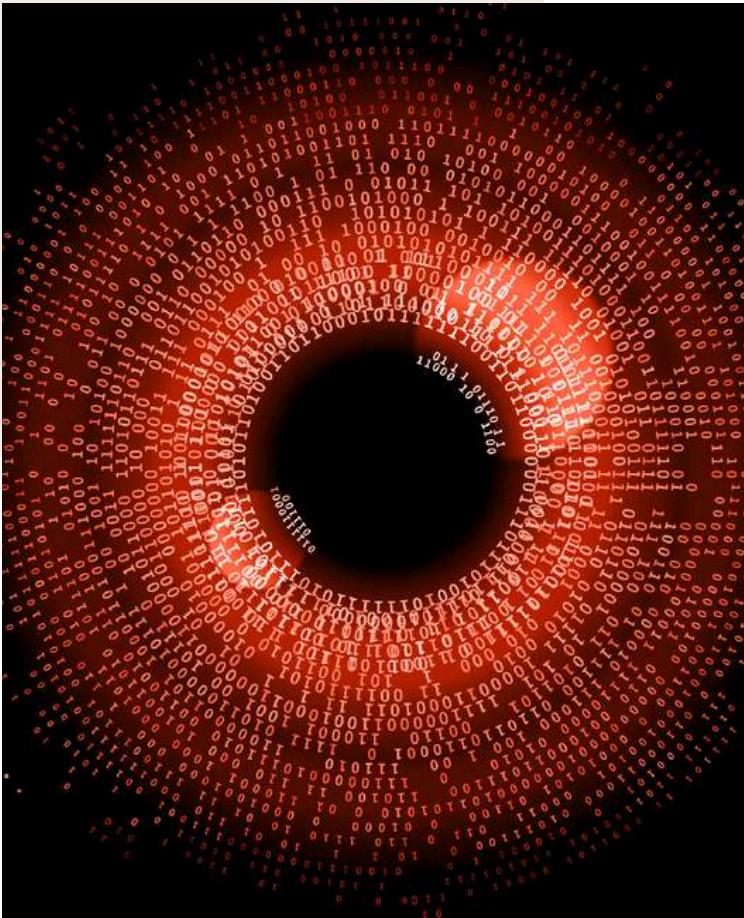


Water hyacinth is an invasive aquatic plant that disrupts aquatic ecosystems, affects biodiversity, and hinders fishing and farming activities. This project proposes an autonomous Unmanned Surface Vehicle (USV) equipped with computer vision and artificial intelligence to detect, collect, and process water hyacinth efficiently. The system uses advanced image-processing techniques for accurate plant identification and autonomous navigation for obstacle avoidance and precise operation. Collected water hyacinth is crushed, compressed, and heated onboard for easier disposal and management. The USV is powered by solar energy, making it an eco-friendly and cost-effective solution. By automating water hyacinth removal, the proposed system helps restore aquatic ecosystems, supports local livelihoods, and promotes sustainable environmental management.



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DARK WEB CRYPTOCURRENCY TRANSACTION MONITORING FOR ILLICIT DRUG TRADE DETECTION WITH BIO-INSPIRED OBJECT RECOGNITION



The proposed system aims to detect and analyze illicit drug trafficking activities on the dark web using blockchain transaction analysis and deep learning techniques. By examining Bitcoin transactions associated with known darknet markets, the system identifies suspicious patterns and tracks activities linked to illegal drug sales. Advanced data analytics and machine learning models are employed to classify and monitor transactions, helping to identify active darknet marketplaces and potential offenders. The system also incorporates Bitcoin currency conversion and transaction tracking to provide actionable insights for law enforcement agencies. By ensuring compliance with legal, ethical, and privacy standards, the proposed solution supports proactive measures to combat drug trafficking and enhance cybercrime investigation capabilities.



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GENERATIVE AI: TEXT, IMAGE AND AUDIO GENERATION



In today's digital era, the advancement of artificial intelligence (AI) has opened avenues for creative and innovative applications across various domains. This project aims to develop a comprehensive generative AI platform capable of synthesizing text, images, and speech based on user inputs. The platform features a user-friendly graphical interface accessible via a web application. Users can input queries and select their desired output format, whether it be text, image, or speech, and receive corresponding generated responses. For text-to-text generation, we employ a language model named, LaMini-Flan-T5-783M, to generate coherent textual output. Similarly, for text-to-image generation, we utilized stable-diffusion-2 model, to produce corresponding images. Furthermore, the platform offers text-to-speech generation capabilities for English language inputs. For that a model named, mms-tts-eng is used to generate high-quality audio representations of the input text. This project combines advanced AI technology with an easy-to-use interface, giving users a versatile platform to interact with AI-generated content in different forms.

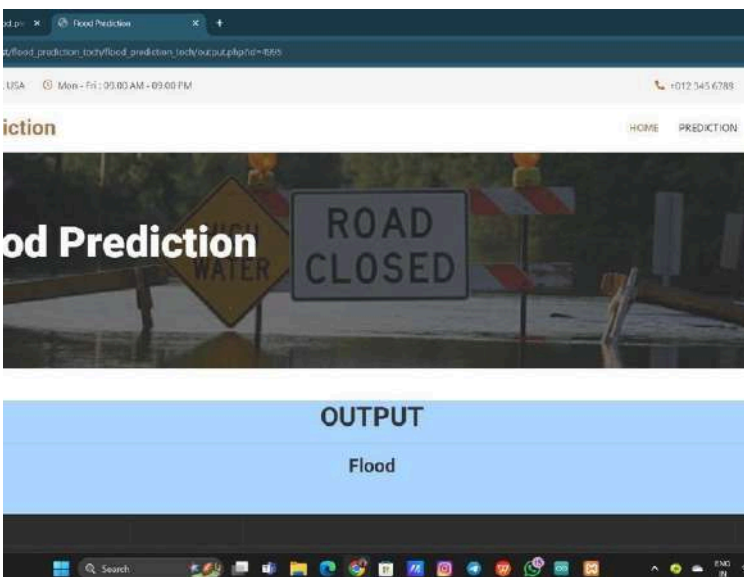


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THE HYBRID BLOCKCHAIN-AI FRAMEWORK FOR ADAPTI



The "Hybrid Blockchain-AI Framework for Adaptive Flood Monitoring and Early Warning System" project is aimed at revolutionizing flood prediction and management in response to the escalating frequency of floods worldwide. At its core, the framework integrates a diverse range of sensors, including those for water level, humidity, temperature, and pressure, to capture a comprehensive set of environmental parameters crucial for flood monitoring. Through the utilization of Python programming language, sophisticated machine learning algorithms such as Support Vector Classifier (SVC), Random Forest, and Decision Tree are implemented to analyze both historical trends and real-time sensor data. This analytical approach enables the system to generate precise flood predictions, thereby facilitating timely responses to potential flood risks. A key aspect of the framework is its ability to deliver alert messages to registered users through mail interface, empowering communities with the information needed to take proactive measures in preparation for impending flood events. By seamlessly integrating advanced technologies and data-driven insights, this project seeks to enhance flood resilience and mitigate the adverse impacts of flooding on vulnerable populations and infrastructure.



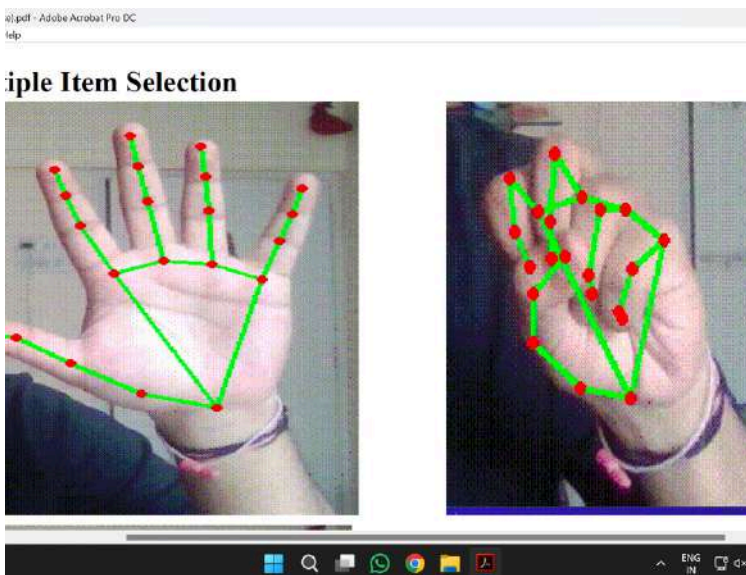
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VIRTUAL MOUSE CONTROL WITH HAND GESTURES



The initiative Gesture Controlled Virtual Mouse simplifies human-computer interaction by incorporating Hand Gestures and Voice Commands. This system facilitates the virtual control of all input and output operations through a combination of static and dynamic hand gestures, complemented by the integration of a voice assistant. Deep Learning algorithms, including the use of state-of-the-art models like CNN implemented by Media Pipe, are employed to accurately recognize and interpret both hand gestures and voice commands.

The incorporation of advanced techniques, such as convolutional neural networks (CNN) via Media Pipe, ensures precise and real-time recognition of hand movements and spoken commands. Consequently, the Gesture Controlled Virtual Mouse not only simplifies the interaction process but also represents a notable advancement in the field of human-computer interfaces.



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Same Vision!*

