JAYA SAKTHI ENGINEERING COLLEGE

(Approved by AICTE, New Delhi, Affliated to Anna University, Chennai)

St.Marry's Nagar,Thiruninravur,chennai-602024

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ARTIFICIAL INTELLIGENCE & DATA SCIENCE

CENTER OF EXCELLENCE

CENTER FOR ARTIFICIAL INTELLIGENCE & DATA SCIENCE

ABOUT THE CENTRE:

The AI & DS- CoE was established at Jaya Sakthi Engineering College in 2022 to provide opportunities to students to develop applications using AI & DS in all domains. It is focused on applying Artificial Intelligence in model building in the fields of Image & Video Analytics, Speech Synthesis & Recognition, and Natural Language Processing.

Data Science & Big Data Analytics is a learning program to understand business intelligence and business and data analytics through the powerful tools of data application. They are developed using technology platforms like Hadoop, HDFS, Map Reduce, and R Language.

AI & DS technology is applicable in all fields and hence the CoE is open for students from all branches of engineering. The CoE facilitates and encourages the students and faculty members to do online training in these areas as 'content beyond the syllabus' and get industry recognized certificates. The CoE provides facilities for students to do many projects and research activities using these technologies. Students participate in various competitions in external events organized by Government and reputed private organizations.

Vision:

Create a world class research facility to identify and study Complex Artificial Intelligence Problems, Different Algorithms, Approaches and Methodologies and apply them to investigate Intelligence Systems.

Mission:

➤ To generate new knowledge by engaging in cutting-edge research in Artificial Intelligence and Machine Learning and to promote academic growth by offering state-of-the-art programs.

➤ To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry

➤ To develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

➤ To add value to information by delivering dependable information systems to the system services for world, by developing domain & technologies that ensure reliability, security, safety, resiliency, survivability and trustworthiness, enabling the use of these systems in mission critical applications with required guaranties of assured performance.

Specific Objectives:

➤ Conduct theoretical and applied research in the field of artificial intelligence and advanced Technologies.

➤ Provide training for upstream and downstream capacity enhancement for artificial intelligence

➤ Encourage multi-stakeholder participation and decision making in addressing the challenges raised by artificial intelligence.

➤ Disseminate information and encourage literacy about artificial intelligence.

➤ Offering Advanced programs for readying the future ready workforce in specific domains.

➤ Create External Funding and Opportunities.

- ❖ Autonomous Computing

- ❖ Health and Medicine

- ❖ Intelligent Space Computing

- ❖ Legal and Ethics

- ❖ Intelligent Smart Cities

- ❖ Computational Natural Sciences and Bioinformatics Vision and Language

- ❖ Geospatial Intelligence.

AICOE-PROJECT 1:

TITLE: CROP YIELD ANALYSIS USING MACHINE LEARNING TECHNIQUES

In agriculture sector where farmers and agribusinesses have to make innumerable decisions every day and intricate complexities involves the various factors influencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary to collect various agricultural information and convert them into relevant information. The filtering and classification techniques are being used to demonstrate how agriculture will benefit from machine learning technologies. The dataset contains information about the crop year, season, state name, district name, production, average rainfall and average temperature.

- The prediction is done by using

  i. k-means clustering

  ii. Support vector machine algorithm.

K-means clustering is one of the clustering methods that process a group of data points into small number of clusters. SVM algorithm is prominent data analysis methodology and it is used for classification and regression techniques.

Team Members:

	Dr.B.GOPINATHAN, Professor, Department of Computer Science and Engineering. **Team Leader**
	B. BAVADHARINI (112016104001) 4th year,CSE Team Member
	S. SHALINI (112016104025) 4th year, CSE Team Member

AICOE-PROJECT2 :

TITLE: HYBRID AI RESTORATION APPROACH ON SEGMENTED MRI BRAIN TUMOR DETECTION

A cerebral tumour occurs when there is an uncontrolled division of cells that form an abnormal group of cells around or within the brain. Processing magnetic resonance images are very complex and constantly studied by the researchers to give doctors better ability to diagnose the patients.

On this module, adaptive brain tumour detection and Image processing are used in the medical tools for detection of tumour. To make this system adaptive we are using SVM (Support Vector Machine), in an unsupervised manner which will be used to create and maintain the pattern for future use. Segmented patterns are used as features to train the SVM based out of the textural features and colour composition of the composite scan images. This produces result that are better in contrast and more reliable in detection of tumours in the brain as compared to previously existing systems.

Team Members:

	Mrs.M.JAYANTHI., M.E., Supervisor Assistant Professor, Department of Computer Science and Engineering.

	EDISON SINGARAJ.M **(112020104002)** 3rd year, CSE Team Member
	UMESH.K (112020104016) 3rd year, CSE Team Member

AICOE-PROJECT 3:

TITLE: IMPLEMENTATION AND ANALYSIS OF WEB SCRAPING TECHNIQUES

The world of Artificial Intelligence and machine learning has its common roots with data, which is primarily the most important entity on its own. Data has already impacted so many businesses worldwide and can never take a back seat when it comes to this technical world. To get access to data in its best form, web scraping was brought to use. Data provided on the internet is of so much use that the whole world is running after it.

Web scraping was brought into practice long back and is still useful to date. This paper aims to make people aware of this technology to help them expand their knowledge. Tools and applications related to web scraping are also mentioned. Key

words: Artificial Intelligence, Machine Learning, Web scraping, Web scraping tools. Since data has already had such a large global impact on organizations, it can never take a backseat in the technical world. Web scraping was used to gain access to data in its optimum form. The information offered on the internet is so valuable that people from all over the world are vying for it. Web scraping has been used for a long time and is still beneficial today.

Team Members:

	Mrs.S.KALAIVANI,M.E., Supervisor Assistant Professor, Department of Computer Science and Engineering. **Team Leader**
	M.GAYATHRI (112020104003) 3rd year, CSE Team Member
	K.KAVIYA (112020104006) 3rd year, CSE Team Member

AICOE-PROJECT 4:

TITLE: A SUSTAINABLE CONSOLIDATED PARTITION GROUPING SYSTEM

In Waste superintendence industry is broadly classified into reduce, reuse, recycle and restore the materials. It is important to note that a vast majority of waste can be reprocessing as long as the proper attention and care are given to it. In order to achieve a clean, green, and zero waste technology that promotes the sustainable development of the superintendence industry, it is possible to reuse and recycle most of the solid waste produced during the making process. The industry is faced with issues related to the need for sustainable development that meets the needs of the present production processes without compromising the capacity of future production.

Linear Discriminant Algorithm (LDA) is a classification algorithm that can be used for waste prediction in the manufacturing industry. It works by finding the linear combination of features that best separates the waste into different categories. A system's use on diverse datasets show how the suggested algorithm can be used effectively to recommend strategies to ensure that the industry's reprocessing procedures are intensified.

Team Members:

	Mr.K.RAJESHKUMAR,M.E., Supervisor Assistant Professor, Department of Computer Science and Engineering. **Team Leader**

	DHANASEKARAN.P **(112019104001)** 4th year, CSE Team Member
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