

SUSTAINABLE DEVELOPMENT GOALS

10. REDUCED INEQUALITIES



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10.2 First-generation students

10.2.1 Proportion of first-generation students

In the academic year 2022-23, Chennai Institute of Technology admitted a total of 1122 students, of which 106 were first-generation students.

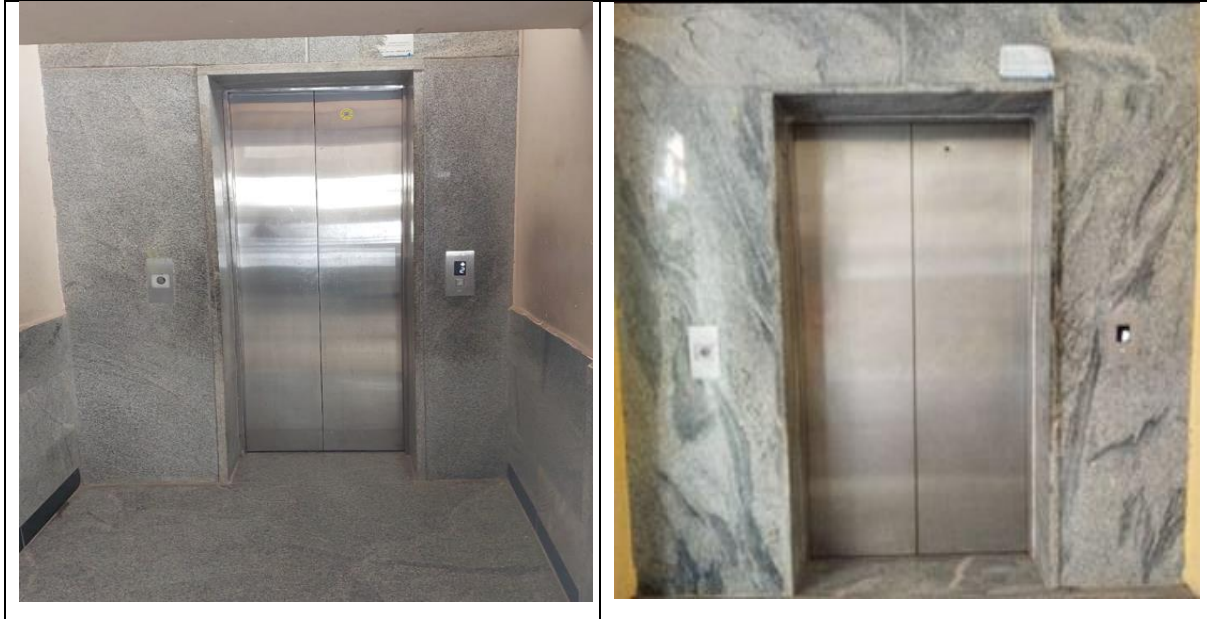
10.6 Measures against discrimination

10.6.7 Accessible facilities

The Institute has implemented a dedicated ramp facility on its pedestrian path to assist individuals with disabilities. This ramp is strategically designed to provide easy and safe access to the campus, ensuring that people with mobility challenges can navigate the area comfortably.



The Chennai Institute of Technology is committed to ensuring accessibility for all its students and staff, including those with disabilities. To support this, the institute has installed lifts on every floor of the campus. These lifts provide seamless access between floors, allowing individuals with mobility challenges to navigate the building with ease and independence.



The Chennai Institute of Technology is dedicated to providing an inclusive and accessible environment for individuals with disabilities. To further support this commitment, the institute offers wheelchairs for use by students, staff, and visitors who require mobility assistance. These wheelchairs are readily available at key locations across the campus, ensuring that those with mobility challenges can navigate the premises comfortably.



The Chennai Institute of Technology prioritizes accessibility and inclusivity for individuals with disabilities, and to support this, the campus is equipped with specially designed accessible toilets. These toilets are strategically located throughout the institute, ensuring that individuals with mobility challenges can access them easily and comfortably.





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Publications Contributing to Reduced Inequalities

S.No	Title
1.	An Effective Anti-Money Laundering System Using Block Chain Technology
2.	The Development of Inference in Healthcare System using FEFL System
3.	Innovative Parkinson's Disease Detection System: LORA-EMG Fusion for Enhanced Accuracy
4.	Artificial Neural Network using Image Processing for Digital Forensics Crime Scene Object Detection
5.	A Holistic Perspective on Bank Performance Using Regulation, Profitability, and Risk-Taking with a View on Ownership Concentration
6.	Nourishing Indian Economy-through Curriculum Change in Rural Schools



Student Project Contributing to Reduced Inequalities

S.No	Name of the Project	Abstract
1.	Object Identification Using Machine Learning for Visually Impaired	Computer Vision is a field of computer science and software engineering focused on recognizing and interpreting images and scenes. It encompasses various tasks like image recognition, object detection, image generation, and image super resolution. Object detection, a crucial aspect of Computer Vision, finds applications in face detection, vehicle detection, pedestrian counting, web image analysis, security systems, and autonomous vehicles. This project aims to utilize advanced object detection algorithms such as R- CNN, Fast R-CNN, Faster R-CNN, Retina Net, SSD, and YOLO. These algorithms, powered by deep learning techniques, require a solid understanding of mathematical principles and deep learning frameworks like TensorFlow, OpenCV, and Image AI. By leveraging these methods, the project seeks to accurately detect objects within images, highlighting them with rectangular boxes and assigning tags to each identified object. Additionally, the project evaluates the accuracy of each detection method.
2.	Exploring Sign Language Recognition Using Convolutional Neural Network	Sign language recognition plays a crucial role in enabling communication for the Deaf and Hard of Hearing community. With the advancements in computer vision and deep learning techniques, Convolutional Neural Networks (CNNs) have shown promising results in understanding and interpreting sign language gestures. This paper presents a comprehensive exploration of sign language recognition using CNN architectures. The research begins by collecting a diverse dataset of sign language gestures, encompassing various hand shapes, movements, and facial expressions. Subsequently, a CNN architecture tailored for sign language recognition is designed and trained using the collected dataset. The CNN model is fine tuned through rigorous experimentation to achieve optimal performance in accurately identifying and classifying sign language gestures. Furthermore, the study investigates the impact of data augmentation techniques, transfer learning, and hyperparameter optimization on the CNN's performance. Comparative analyses are conducted to evaluate the effectiveness of different CNN architectures and training strategies in sign language recognition tasks. Additionally, the research delves into the challenges encountered in sign

		<p>language recognition, such as variations in lighting conditions, occlusions, and complex hand movements. Strategies to mitigate these challenges are explored, including the incorporation of temporal information and attention mechanisms in CNN architectures. Through extensive experimentation and evaluation, the proposed CNN- based approach demonstrates significant advancements in sign language recognition accuracy and robustness</p>
3.	<p>Sign speak: Audio to sign language converter</p>	<p>This project is based on converting the audio signals receiver to text using speech to text API. Speech to text conversion comprises of small, medium and large vocabulary conversions. Such systems process or accept the voice which then gets converted to their respective text. This paper gives a comparative analysis of the technologies used in small, medium, and large vocabulary Speech Recognition System. The comparative study determines the benefits and liabilities of all the approaches so far. The experiment shows the role of language model in improving the accuracy of speech to text conversion system. We experiment with the speech data with noisy sentences and incomplete words. The results show a prominent result for randomly chosen sentences compared to sequential set of sentences. This project focuses on building an effective means of communication for the specially abled people by the implementation of graphical hand gestures. We utilize the major principles of NLP(natural language processing) to make this project into a reality.</p>
4.	<p>Visual Gestural Communication Deciphering: A Computer Vision Approach</p>	<p>Sign language is the only tool of communication for the person who is not able to speak and hear anything. Sign language is a boon for the physically challenged people to express their thoughts and emotion. In this work, a novel scheme of sign language recognition has been proposed for identifying the alphabets and gestures in sign language. With the help of computer vision and neural networks we can detect the signs and give the respective text output. The main purpose of this technology is to create algorithms and software that can accurately recognize and interpret hand gestures. Computer technology is used to capture the movements of gestures and convert them to text or speech. The system uses machine learning algorithms to recognize patterns in hand gestures and translate them into meaningful language. The accuracy of this device is very important as it directly affects the communication between the deaf and the hearing. Sign interpretation using computer vision has many applications, including education, medicine, and entertainment. This technology has the potential to bridge the communication gap between deaf and hearing people and provide easier communication solutions. As research in</p>

		<p>this area continues, we can expect to see major advances in translation technology in the future.</p>
5.	<p>A Machine learning approach to human trafficking prediction</p>	<p>This study introduces a comprehensive method for identifying and predicting human trafficking using Machine-Learning. Given the urgent need for more efficient prevention and intervention techniques in addressing this pervasive crime, the conventional manual approaches are time-consuming. The proposed method automates the identification and prediction processes by leveraging various Machine- Learning techniques. It analyzes extensive data, including social media posts, individual demographics, and internet activity, to pinpoint potential victims and forecast their likelihood of involvement in human trafficking. Utilizing methods such as decision trees, support vector machines, and neural networks enhances the system's effectiveness. Employing cross-validation, model evaluation, and feature selection further boosts the accuracy of the system. This technique offers a substantial improvement in accuracy, aiding law enforcement organizations in their endeavors to combat this heinous crime.</p>
6.	<p>Indoor Navigation System for Visually Impaired People Using Lifi and Deep Learning</p>	<p>Indoor navigation system for virtually impaired individuals utilizing deep learning techniques. The system addresses the challenge of navigating complex indoor environments by leveraging visible light communication technology to provide real time navigation system. The proposed system encompassesing, modelling selection, training, evaluation, and testing phases. Through iterative improvement and user feedback, the system achieves enhanced performance and usability. Integration into user friendly applications enables seamless deployment in various indoor settings, empowering visually impaired individuals to navigate independently and safely. This system contributes to advancing assistive technologies and promoting accessibility for individual impairments. Throughout the process, factors such as robustness, adaptability to different indoor environments, real time performance and user interface design for accessibility. Additionally, ensuring privacy and security of user data crucial when developing and deploying such systems. Indoor navigation poses significant challenges for visually impaired individuals, hindering their autonomy and mobility.</p>



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Events to raise awareness for Reduced Inequalities

The Chennai Institute of Technology hosted an awareness event on December 3, 2022, in honor of the International Day of Persons with Disabilities, with the theme "Disability is Not an Obstacle to Success."

The poster features the Chennai Institute of Technology logo and accreditation logos (NBA, NIRF 175th Rank, NAAC A+) at the top. The central image shows a man in a wheelchair sitting in front of a chalkboard with mathematical equations, set against a space background with planets. The text on the poster reads: "DISABILITY is not an obstacle to success". Below this, it says "International Day of Persons with Disabilities 3 December" and "International Day of Persons with Disabilities". A quote states: "However difficult life may seem, there is always something you can do and succeed at." The website address www.citchennai.edu.in is at the bottom.

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