Patent Search

Invention Title	ARTIFICIAL INTELLIGENCE BASED MULTIMODAL IMAGE RECONSTRUCTION SYSTEM
Publication Number	22/2024
Publication Date	31/05/2024
Publication Type	INA
Application Number	202441039570
Application Filing Date	21/05/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMPUTER SCIENCE
Classification (IPC)	G06N0003080000, G06T0011000000, A61B0005000000, G06T0007330000, G16H0030400000

Inventor

Name	Address	Country	Nat
Mrs.Polagani Rama Devi	Assistant Professor, Department of Information Technology, Velagapudi Ramakrishna School of Engineering, Siddhartha Academy of Higher Education (A Deemed to be University), Vijayawada, Andhra Pradesh, India. Pin Code: 520007	India	Indi
Dr.Rajesh B. Mapari	Anuradha Engineering College, Chikhli, Buldhana District, Maharashtra, India. Pin Code: 443201	India	Indi
Dr.S.China Venkateswarlu	Professor of Electronics & Communication Engineering, Institute of Aeronautical Engineering (Autonomous), Dundigal, Medchal District, Hyderabad, Telangana, India. Pin Code:500043	India	Indi
Dr.Kishor H.Walse	Sant Bhagwanbaba Kala Mahavidyalaya, Sindkhed Raja, At. Po. Tq. Sindkhed Raja, Buldhana District, Maharashtra, India. Pin Code:443203	India	Indi
Dr.Keerthipati Kumar	Associate Professor, Department of CSE (AI & ML), SV.College of Engineering, Karakambadi Road, Tirupati, Tirupati District, Andhra Pradesh, India. Pin Code:517501	India	Indi
Dr.Pundru Prasanth Kumar	Assistant Professor, Department of ECE, Rajiv Gandhi University of Knowledge Technology (RGUKT)-Srikakulam, Andhra Pradesh, India. Pin Code:532402	India	Indi
Mr.Vivek Birla	Assistant Professor, Department of Management Studies, TMIMT, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India. Pin Code:244001	India	Indi
Mrs.Haripriya R	Assistant Professor, Department of Computer Applications, SNS College of Technology, Coimbatore, Tamil Nadu, India. Pin Code:641035	India	Indi
Dr.Kandunuri Ramakrishna	Assistant Professor, Department of Computer Science and Engineering, Malla Reddy Engineering College for Women (MRECW), Hyderabad, Telangana, India. Pin Code: 500100	India	Indi
Dr.Dasari Vijaya Kumar	Adjunct Professor, Department of Environmental Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003	India	Indi

Applicant

Name	Address	Country	Nat
Mrs.Polagani Rama Devi	Assistant Professor, Department of Information Technology, Velagapudi Ramakrishna School of Engineering, Siddhartha Academy of Higher Education (A Deemed to be University), Vijayawada, Andhra Pradesh, India. Pin Code: 520007	India	Indi
Dr.Rajesh B. Mapari	Anuradha Engineering College, Chikhli, Buldhana District, Maharashtra, India. Pin Code: 443201	India	Indi
Dr.S.China Venkateswarlu	Professor of Electronics & Communication Engineering, Institute of Aeronautical Engineering (Autonomous), Dundigal, Medchal District, Hyderabad, Telangana, India. Pin Code:500043	India	Indi
Dr.Kishor H.Walse	Sant Bhagwanbaba Kala Mahavidyalaya, Sindkhed Raja, At. Po. Tq. Sindkhed Raja, Buldhana District, Maharashtra, India. Pin Code:443203	India	Indi
Dr.Keerthipati Kumar	Associate Professor, Department of CSE (AI & ML), SV.College of Engineering, Karakambadi Road, Tirupati, Tirupati District, Andhra Pradesh, India. Pin Code:517501	India	Indi
Dr.Pundru Prasanth Kumar	Assistant Professor, Department of ECE, Rajiv Gandhi University of Knowledge Technology (RGUKT)-Srikakulam, Andhra Pradesh, India. Pin Code:532402	India	Indi
Mr.Vivek Birla	Assistant Professor, Department of Management Studies, TMIMT, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India. Pin Code:244001	India	Indi
Mrs.Haripriya R	Assistant Professor, Department of Computer Applications, SNS College of Technology, Coimbatore, Tamil Nadu, India. Pin Code:641035	India	Indi
Dr.Kandunuri Ramakrishna	Assistant Professor, Department of Computer Science and Engineering, Malla Reddy Engineering College for Women (MRECW), Hyderabad, Telangana, India. Pin Code: 500100	India	Indi
Dr.Dasari Vijaya Kumar	Adjunct Professor, Department of Environmental Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India. Pin Code:530003	India	Indi

Abstract:

The present invention discloses an Artificial Intelligence-Based Multimodal Image Reconstruction System, designed to address the limitations of individual imaging modalit fusing information from multiple sources using advanced deep learning techniques. The system comprises modules for image acquisition, preprocessing, feature extractic fusion, reconstruction, and postprocessing, culminating in the generation of a high-quality, comprehensive image. By harnessing the complementary strengths of different modalities, the system enhances diagnostic accuracy, visualization, and versatility across various fields including medical imaging, remote sensing, and industrial inspectio innovative approach has the potential to significantly impact diagnostic capabilities and improve outcomes in diverse applications. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] Multimodal imaging has emerged as a crucial tool across various domains, including medical diagnostics, scientific research, and industrial applications Traditional imaging techniques, such as X-ray, MRI, CT scan, ultrasound, and optical imaging, each offer unique insights into the objects or subjects being examined. However, they also come with inherent limitations, such as differences in resolution, contrast, and sensitivity to various types of information.

[002] In medical diagnostics, for instance, a single imaging modality may not provide sufficient information for accurate diagnosis and treatment planning. Integrating da from multiple modalities can offer a more comprehensive understanding of anatomical structures and pathological conditions. Similarly, in fields like remote sensing an industrial inspection, combining data from diverse imaging sensors can lead to better analysis and decision-making.

[003] The field of the present invention lies at the intersection of artificial intelligence and multimodal imaging. By leveraging advanced machine learning techniques, particularly deep learning, this invention aims to address the challenges associated with fusing information from multiple imaging modalities. The goal is to develop a system capable of reconstructing high-quality images that integrate the complementary information provided by each modality.

BACKGROUND OF THE INVENTION

[004] The advent of advanced imaging technologies has revolutionized various fields, from healthcare to industrial inspection, by providing detailed insights into comple structures and phenomena. Traditional imaging modalities such as X-ray, MRI, CT scan, ultrasound, and optical imaging each offer unique advantages in visualizing specif aspects of the target object or subject. However, they also possess inherent limitations, including differences in resolution, contrast, and noise levels. These limitations ca hinder the accuracy of diagnostic interpretations and impede the ability to extract meaningful information from the acquired images.

[005] To address these challenges, there has been a growing interest in multimodal imaging approaches that leverage the strengths of multiple imaging modalities to

View Application Status