School of Computer Science Engineering and Information Systems

Department of Computer Applications

Winter Semester –2024-25

PMCA699J – Internship -II / Dissertation -II

0th Review

Register Number	23MCA0304
Student Name	Sayantan Bhattacharyya
Internship / Disseration Domain (Capstone Project)	ARTIFICIAL INTELLIGENCE(AI): MACHINE LEARNING
Internship / Disseration Title (Capstone Project)	Satellite-Based Water Body Detection and Trend Analysis in Vellore
Abstract (Mini-200 Words)	The study of water body detection and trend analysis is critical for sustainable water resource management, particularly in regions facing water scarcity and climatic challenges. This project focuses on detecting and analyzing water bodies in the Vellore district using satellite imagery combined with advanced deep learning techniques. By leveraging high-resolution satellite data, this study aims to identify water bodies with precision, track their temporal changes, and provide insights into seasonal and long-term trends. The analysis will help uncover patterns in water body dynamics, influenced by factors such as monsoonal variations, urbanization, and environmental changes. The project's outcomes have the potential to assist policymakers, urban planners, and environmentalists in devising strategies for better water resource management, planning, and conservation efforts. Additionally, the use of deep learning ensures an automated and scalable approach, making the methodology adaptable for other regions with similar challenges. This research also highlights the importance of integrating technology and environmental studies to address real-world problems. The findings are expected to contribute to a deeper understanding of the region’s water dynamics while providing a

	foundation for further studies in satellite-based environmental monitoring and analysis.
Keywords	Satellite Imagery, Water Body Detection, Trend Analysis, Deep Learning, Vellore District, Temporal Changes, Water Resource Management, Environmental Monitoring, Automated Analysis
Company Name & Address (For Off-campus students only)	
External Memtor details (For Off-campus students only)	
Aprroval Status (for Guide)	YES
Meeting date & Time	
Student-Guide Interaction	
Guide Name	Dr. Jagannathan J.
Guide Signature	
Approval Date	

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