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Notice for the PhD Viva Voce Examination

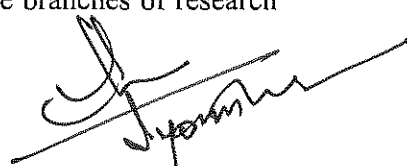
Mr Anil Antony, Registration Number: 2072414, PhD Scholar at the School of Engineering and Technology, CHRIST (Deemed to be University), will defend his PhD thesis at the public viva-voce examination on Friday, 11 September 2026, at 11.15 am in CDI Conference Room, Block V, Bangalore Kengeri Campus, CHRIST (Deemed to be University), Bengaluru 560074, Karnataka, India.

Title of the Thesis	:	Structured Learning for Geographical Feature Extraction, Land Cover Dynamics, and Crop Classification
Discipline	:	Computer Science and Engineering
External Examiner - I	:	Dr S Thaiyalnayaki Associate Professor Department of Computer Science and Engineering Bharath Institute of Higher Education and Research Chennai - 600073 Tamil Nadu
External Examiner - II	:	Dr Premanand Pralhad Ghadekar Professor Department of Computer Science & Engineering Vishwakarma Institute of Technology Pune - 411037 Maharashtra
Supervisor	:	Dr Ganesh Kumar R Professor Department of Computer Science and Engineering School of Engineering and Technology CHRIST (Deemed to be University) Bangalore Kengeri Campus Bengaluru - 560074 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Place: Bengaluru

Date: 03 September 2026



Registrar (Academics)

ABSTRACT

The combined use of Remote Sensing (RS) technologies and Artificial Intelligence (AI) has brought significant change to the field of geographical information analytics, particularly in domains such as agricultural resource management, land use, and crop classification. The large-scale availability of high-resolution, multi-spectral, and multi-temporal remote sensing imagery has found new opportunities for large-scale environmental analysis. However, extracting the meaning from such complex datasets requires robust computational frameworks capable of handling spatial, spectral, and temporal variability. In this context, the present study proposes a new framework for geographical information analytics based on structured learning to systematically extract and identify geographical features. The proposed methodology integrates advanced deep learning architectures with nature-inspired optimization algorithms to address the main challenges in land and food crop classification. Specifically, the African Vulture Optimization Algorithm (AVOA) and the Enhanced Dipper Throat Optimization Algorithm (EDTOA) are incorporated for adjustable hyperparameter tuning and optimization of deep learning models. Overall, the results provide scalable, efficient, and high-accuracy applications in precision agriculture, food security planning, and environmental monitoring. This research provides a meaningful contribution to addressing large-scale agricultural and environmental challenges while establishing a good framework for optimization-driven geographical information analytics.

Keywords: *Remote Sensing, Deep Learning, Multi-Head Attention, BiLSTM, SqueezeNet, Enhanced Dipper Throat Optimization Algorithm, African Vulture Optimization Algorithm.*

Publications:

1. **Anil Antony** and Ganesh Kumar R. Enhancing food crop classification in agriculture through dipper throat optimization and deep learning with remote sensing. *E-Prime-Advances in Electrical Engineering, Electronics and Energy*, 2024, 9, 100732.
2. **Anil Antony** and Ganesh Kumar R. "Precision Food Crop Mapping Using Deep Neural Networks and Improved Dipper Throat Optimization Techniques," *International Journal of Engineering Trends and Technology*, 2026, 74(4), pp. 87–100.
3. **Anil Antony** and Ganesh Kumar R. "Unveiling the landscape: A comparative study of U-Net models for geographical features segmentation." In *International Conference on Data Science, Computation and Security*, pp. 325-333. Singapore: Springer Nature Singapore, 2023.
4. **Anil Antony** and Ganesh Kumar R. 'Metaheuristic Optimization of Deep Learning Models for Land Cover Classification Using Remote Sensing Data' In *Congress on Intelligent Systems* (pp. 25-34). Cham: Springer Nature Switzerland, 2025.