

Seminar Title : Cattle Identification using Visual Cues

Speaker : Camellia Ray (Rollno : 521cs1005)

Supervisor : Prof. Sambit Bakshi

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Abstract : Cattle biometrics and milk production estimation are pivotal in enhancing dairy farming efficiency and sustainability. Accurate identification of cattle breeds and their regional adaptation can significantly impact herd management, resource allocation, and milk yield optimization. This research focuses on using both visual (image-based) and textual data collected through our self-designed cattle dataset to predict the geographical distribution of Indian cattle based on climate and state-wise locations and to estimate their milk production capacity. By leveraging cattle biometrics, such as physical traits captured in images and morphological characteristics from textual data (size, breed, horn shape, usage), we develop separate models for state-wise and climate-wise predictions. The outputs from these models will then be combined using a multimodal approach to enhance the accuracy of milk production predictions. Despite recent advances in cattle identification, challenges remain in integrating visual and textual features for precise prediction. This presentation will address these gaps using deep learning techniques, optimizing model performance for real-world applications. The findings are intended to support data-driven decisions that enhance productivity, optimize milk yield, and preserve the ecological balance across diverse geographical and climatic regions.