# Malla Reddy College of Engineering and Technology------------------------------------------------------------------------------------------------

**DEPARTMENT OF COMPUTATIONAL INTELLIGENCE**

**IV YEAR CSE – AIML-A II SEM**

**COURSE: MAJOR PROJECT COURSE CODE: 21CIMP1A01**

**TITLE: AUTONOMOUS DRONE LANDING SCENE RECOGNITION USING TRANSFER LEARNING**

**ABSTRACT**

Developing an autonomous drone landing system ensures precise and safe landings without human intervention. This requires addressing challenges such as varying environmental conditions, accurate detection of landing zones, and real-time obstacle avoidance to maintain stability. Existing systems use basic image processing or manual intervention, which limits adaptability to complex or dynamic scenarios. However, these approaches struggle with scene variability and fail to generalize well under different altitudes or environmental conditions. Our proposed system leverages a deep convolutional neural network (CNN) combined with transfer learning and fine-tuning techniques. This enables accurate scene recognition and adaptability to different altitudes, ensuring precise landings even in unpredictable conditions. The algorithm integrates advanced sensors, computer vision, and control mechanisms, providing robust and reliable performance. This ensures the drone navigates dynamic environments and lands safely on the designated platform.

**Keywords:** Drone landing, transfer learning, CNN, scene recognition, obstacle avoidance.

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