Autonomous Aerial Robotics: AI-Powered Navigation and Dynamic Obstacle Avoidance

Ravatappa A Bhosagi[1] and Dr. Sher Jung[2]

[1]Research Scholar, Department of Computer Science and Engineering

[2]Professor, Department of Computer Science and Engineering

Sunrise University, Alwar, Rajasthan

Abstract: *Autonomous aerial robotics has emerged as a transformative technology in the domains of surveillance, delivery, agriculture, and disaster management. The integration of artificial intelligence with unmanned aerial vehicles enables dynamic obstacle avoidance and autonomous navigation in complex and uncertain environments. This research paper reviews current methodologies, including deep learning, reinforcement learning, and sensor fusion, to enhance UAV performance and reliability. Additionally, the study presents simulations and comparative analyses of AI algorithms for real-time path planning and collision avoidance..*

Keywords: AI Navigation, Obstacle Avoidance, Reinforcement Learning