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(57) Abstract :
The growing industrial footprint in ecologically sensitive areas is creating a pressing need for comprehensive frameworks that evaluate and reduce the environmental impact of corporate operations. This study presents a novel approach to thoroughly examine and manage the environmental effects of industrial activity by fusing cutting-edge artificial intelligence (AI) algorithms with traditional zoological observations. The study, which is being carried out in an imaginary location, focuses on identifying key species, mapping ecological hotspots, and predicting changes in biodiversity. Results indicate the vulnerability of individual species, including the Amur Tiger and Red-crowned Crane, and identify unique ecological hotspots characterized by habitat disturbance, pollutant spread, and noise disturbance. Predictive algorithms identify taxonomic differences in biodiversity changes, highlighting the need for properly focused conservation efforts. Suggested mitigating measures, specific to identified hotspots, support pollution control, habitat restoration, and operational modifications. Combining AI with zoological knowledge not only broadens our understanding of ecology but also provides businesses with workable ways to reduce their environmental footprint. This research promotes a symbiotic balance between economic advancement and environmental preservation, contributing to the current conversation on sustainable business practices. The study establishes the foundation for a revolutionary approach to corporate environmental responsibility, advocating proactive engagement in sustainable practices for the preservation of ecosystems and global biodiversity. It acknowledges limitations and suggests avenues for future investigation. Keywords: Ecological Impact Assessment, Business Operations, Sustainability, Biodiversity Conservation, Environmental Impact

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