

PREFACE

This report presents findings and insights from a study focused on the intersection of infrastructure development and wildlife conservation, particularly concerning road-related wildlife accidents. As roads serve as vital arteries for human transportation and commerce, their construction and expansion can inadvertently endanger wildlife populations by disrupting natural habitats and creating collision hotspots. In response to this pressing issue, the study endeavors to propose a practical solution that transcends traditional approaches to monitoring and mitigation.

The objectives of the study encompass identifying vulnerable species corridors, assessing their susceptibility to road accidents, and deploying camera trap technology to track incidents and monitor wildlife populations. Additionally, the study aims to develop a robust system leveraging Convolutional Neural Networks (CNN) for the detection of wildlife collisions and the implementation of basic alert mechanisms to safeguard valuable species.

While this study recognizes the inherent difficulties and limitations in accurately detecting wildlife collisions, it also highlights areas where we can make refinements. These improvements involve making our datasets better, thinking about real-world situations and factors, trying different deep learning models to make them more accurate, and the development of user-friendly workflows to streamline the alerting system.

Crucially, the preface underscores the significance of interdisciplinary collaboration and technological innovation in advancing ecological research and conservation efforts. As the field of ecology embraces the era of big data, the integration of deep learning techniques offers promising prospects for more efficient data analysis and informed decision-making.

Overall, this report aims to contribute to the ongoing discourse surrounding wildlife conservation and road safety, with the hope of fostering greater awareness, understanding, and action in mitigating the impact of road-related threats on biodiversity.