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Wild Animal Classifier Using CNN

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Abstract: *Classification and identification of wild animals for tracking and protection purposes has become increasingly important with the deterioration of the environment, and technology is the agent of change which augments this process with novel solutions. Computer vision is one such technology which uses the abilities of artificial intelligence and machine learning models on visual inputs. Convolution neural networks (CNNs) have multiple layers which have different weights for the purpose of prediction of a particular input. The precedent for classification, however, is set by the image processing techniques which provide nearly ideal input images that produce optimal results. Image segmentation is one such widely used image processing method which provides a clear demarcation of the areas of interest in the image, be it regions or objects. The Efficiency of CNN can be related to the preprocessing done before training. Further, it is a well-established fact that heterogeneity in image sources is detrimental to the performance of CNNs. Thus, the added functionality of heterogeneity elimination is performed by the image processing techniques, introducing a level of consistency that sets the tone for the excellent feature extraction and eventually in classification.*

Keywords: Multi-class Classification, Computer Vision, Deep Learning, CNNs, Image Segmentation, Data Augmentation, Cross-Validation

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BIOGRAPHY

- Sahil Faizal, is a Final-Year Student pursuing Bachelors in Computer Science Engineering at Vellore Institute of Technology, Chennai. Currently he is working in collaboration with NTU, Singapore on a research project. During undergrad studies he has worked on various research based and academic projects in the field of Deep Learning and Computer Vision. He is also the recipient of the MITACS Globalink Research Award for pursuing research based work at Dalhousie University Canada. He is keen to pursue higher studies in the field of computer science with concentration in Artificial Intelligence to bring positive changes in the lives of people.
- Sanjay Sundaresan, is a Final Year undergraduate student pursuing Bachelors in Computer Science and Engineering at Vellore Institute of Technology, Chennai. As part of the project-oriented academic curriculum, he has undertaken multiple projects which use research as the foundation for impactful large-scale solutions. He believes that leveraging technology to offer holistic and eclectic solutions needs to be the primary focus, right from the grassroots level. He is eager to probe the domains of Cloud Computing, Artificial Intelligence and Internet of Things at a deeper level in a research context.