Towards Kenyan Sign Language Hand Gesture Recognition Dataset

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Abstract: Datasets for hand gesture recognition are now an important aspect of machine learning. Many datasets have been created for machine learning purposes. Some of the notable datasets include Modified National Institute of Standards and Technology (MNIST) dataset, Common Objects in Context (COCO) dataset, Canadian Institute For Advanced Research (CIFAR-10) dataset, LeNet-5, AlexNet, GoogLeNet, The American Sign Language Lexicon Video Dataset and 2D Static Hand Gesture Colour Image Dataset for ASL Gestures. However, there is no dataset for Kenya Sign language (KSL). This paper proposes the creation of a KSL hand gesture recognition dataset. The dataset is intended to be in two-fold. One for static hand gestures, and one for dynamic hand gestures. With respect to dynamic hand gestures short videos of the KSL alphabet a to z and numbers 0 to 10 will be considered. Likewise, for the static gestures KSL alphabet a to z will be considered. It is anticipated that this dataset will be vital in creation of sign language hand gesture recognition systems not only for Kenya sign language but of other sign languages as well. This will be possible because of learning transfer ability when implementing sign language systems using neural network models.

Keywords: Dataset, Kenya Sign language KSL, object recognition, Artificial intelligence, Machine learning,