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| Title | Number plate recognition system for vehicles using machine learning approach | | |
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| Abstract |  |
| In recent times, the deep learning techniques in particular Convolutional Neural Networks (CNNs) are extensively used in computer vision and machine learning field. Machine learning technique provides high accuracy in different classification tasks like as MNIST, CIFAR-100, ImageNet, and CIFAR-10. However, there are lots of research being conducted for Bangla number plate recognition in the last decade. None of them are used to deploy a physical system for the Bangla Number plate recognition system because of their poor recognition accuracy. In this research work, we proposed a new algorithm for vehicle number plate recognition based on Connected Component Analysis (CCA) and Convolutional Neural Networks (CNNs). We have implemented the CCA technique for number plate detection and character segmentation. Which produced 92.78% accuracy for number plate detection and 97.94% accuracy for character segmentation. Along with that, we have also implemented a CNN model for character recognition and used a dataset “PlateNumbers” for training this model. The dataset consists of 408 (120 × 110) character images in 17 classes. It’s a standard and very first dataset. So finally, we have produced 96.91% accuracy in the character recognition stage by implementing our CNN model. The results of our research work indicate that the performance of the system is noticeable. | |