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| Title | Cassava Leaf Disease Classification Using Supervised Contrastive Learning | | |
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| Abstract |  |
| Cassava is a nutty-flavored long bulbaceous starchy root vegetable. It is the principal source of calories and carbs for many people around the world, especially in southern Africa. Cassava production is most common in South Africa because it can survive well in a harsh environment. Sometimes the cassava crop gets affected by leaf disease, which infects its overall production, and reduces the farmers’ income. And manual leaf disease detection may not obtain proper accuracy. In order to detect cassava leaf diseases, the current studies face various challenges such as poor accuracy, low detection rate, and high processing time. In our research, we have used supervised contrastive learning to detect four diseases of the cassava leaf and identify healthy leaves, from which we got tremendous results. We also used data augmentation modules, encoder networks, and projection networks to perform certain tasks such as network training, embedding similar classes nearby and other classes away, image labeling, and so on. From our study, we have achieved an accuracy, precision, recall, and f1score of 88%, 78%, 79%, and 79%, respectively using supervised contrastive model. | |