

Bone Fracture Detection with X-Ray Images Using Mobilenet V3 Architecture

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Abstract : Technologies that are developing quickly are being developed daily in a variety of disciplines, particularly the medical field. For the purpose of detecting bone fractures in X-ray pictures of different body segments, our work compares the ResNet-50 and MobileNetV3 architectures. It evaluates accuracy and computing efficiency with X-rays of the elbow, hand, and shoulder from the MURA dataset. Through training and validation, the models are evaluated on normal and fractured images. While ResNet-50 showcases superior accuracy in fracture identification, MobileNetV3 showcases superior speed and resource optimization. Despite ResNet-50's accuracy, MobileNetV3's swifter inference makes it a viable choice for real-time clinical applications, emphasizing the importance of balancing computational efficiency and accuracy in medical imaging. We created a graphical user interface (GUI) for MobileNet V3 model bone fracture detection. This research underscores MobileNetV3's potential to streamline bone fracture diagnoses, potentially revolutionizing orthopedic medical procedures and enhancing patient care.

Keywords : CNN, MobileNet V3, ResNet-50, healthcare, MURA, X-ray, fracture detection

Conference Title : ICMLC 2024 : International Conference on Machine Learning and Cybernetics

Conference Location : Mumbai, India

Conference Dates : February 12-13, 2024