**Related Work**

To address the challenge of wrist fracture detection, Lu et al. [1] proposed a universal CAD system for X-ray images based on deep learning in the task of detecting wrist fracture. The work was founded on the modified Ada-ResNeSt backbone and an AC-BiFPN detection method. This study has, as some of the major highlights, image preprocessing, data augmentation, and a private dataset—MURA-D, developed from the public MURA dataset. The network achieved an average precision rate of 68.4%, which proved the ability to predict the outcomes within 122 milliseconds per image as tested on the MURA-D test dataset. Various known limitations of the system include the issues regarding the resolution of the dataset and occlusion in the fractures that need further optimization before being used clinically. This consequently opens avenues for further studies on the inclusion of other detection methods and using a much larger dataset.

Ebsim et al. [2] introduced a fully automated method for diagnosing distal radius fractures based on posteroanterior (PA) and lateral (LAT) radiographs. The method exploits the shape and texture-based features extracted via random forest classifiers. The combination of the two views improved the system's performance, reaching an area under the curve AUC of 0.942 for the manual annotations and 0.914 for annotations generated by automated procedures. The study emphasizes the advantages of combining features from different views; still, dependence on manual annotation to achieve high accuracy is a drawback. Future research may concentrate on the automation of segmentation methods and the improvement of classifier efficacy in various clinical settings.

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| **Author(s)** | **Body Part** | **Images** | **Methodology** | **Result** |
| Lu et al. [1] | Various | 6000 | Dual convolution Ada-ResNeSt backbone; AC-BiFPN for feature detection; | Achieved an AP of 68.4% on MURA-D and 85.6% on DeepLesion with 122ms/image inference. |
| Ebsim et al. [2] | Wrist | 787 | Random Forest Regression Voting Constrained Local Model (RFCLM) for segmentation; Combined shape and texture feature classifiers. | Improved classification performance: AUC of 0.942 with manual annotation, 0.914 automated. |

**References**

1. Lu, S., Wang, S., & Wang, G. (2022). Automated universal fractures detection in X-ray images based on deep learning approach. *Multimedia Tools and Applications, 81*(44487-44503).
2. Ebsim, R., Naqvi, J., & Cootes, T. (2017). Fully automatic detection of distal radius fractures from posteroanterior and lateral radiographs. *Lecture Notes in Computer Science*, 10550, 91-98.