Master thesis proposal

Title: An algorithm to anomaly detection in orthopaedic medical imaging

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Description

X-ray images were the most commonly used modality to analyse and detect orthopaedic abnormalities in musculoskeletal system. One of the example is detection and analysis of bone fracture. One of the approaches to solve the task of orthopaedic imaging processing based on deep learning – techniques that become more significant in recent years [1].

The objectives of the work:

1. Research on capabilities of different DL models to detect and analyse the abnormalities in musculoskeletal system.
2. The proposal of a novel algorithm to detect abnormalities in musculoskeletal system.
3. Performance analysis of the proposed algorithm.

References

[1] Ounasser, N., Rhanoui, M., Mikram, M., & Asri, B. E. (2025). Deep learning-based anomaly detection in orthopedic medical imaging: A systematic literature review. *Journal of Orthopaedics*.

Datasets to be used

[1]https://stanfordaimi.azurewebsites.net/datasets/3e00d84b-d86e-4fed-b2a4-bfe3effd661b

[2] https://zenodo.org/records/3893508