

Deep learning based grading of motionartifacts in HR-pQCT

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ACM Reference Format:

Johann Strunck. 2023. Deep learning based grading of motionartifacts in HR-pQCT. 1, 1 (July 2023), 1 page. <https://doi.org/10.1145/nnnnnnn.nnnnnnn>

1 INTRODUCTION

A common issue of High-resolution peripheral quantitative computed tomography (HR-pQCT) scans is the appearance of motion artifacts in Images. These artifacts can appear due to involuntary movements like twitches and spasms. Depending on the severeness of those artifacts in the resulting image, it might not be sufficient for medical use and a re scan is necessary. The decision of the severity is currently done by a Doctor which gives the image a number from 1 to 5, where 1 equals no motion artifacts and 5 equals severe motion artifacts. The descission of severity is often biased and varies from doctor to doctor. To support the descission of the doctor there have been approaches by [] and [] to improve the confidence of the result. both of those methodes perform better than the average doctor but still have considerable error rates. In this paper we will propose a new Convolutional Neural Network(CNN) which uses state of the art methodes to calculate the severity of motion Scores in CT scans. Afterwards we will compare it to the two existing methodes.

2 LITERATURE REVIEW

2.1 Grad-CAM

3 METHODOLOGY

4 RESULTS

5 DISCUSSION/CONCLUSION

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2023. XXXX-XXXX/2023/7-ART \$15.00
<https://doi.org/10.1145/nnnnnnn.nnnnnnn>