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Automatic Spine Curvature Estimation from X-ray Images of a Mouse Model

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## Highlights

- This paper proposes a fully automatic solution for spine segmentation and curvature quantification from X-ray images of mice.
- The proposed solution consists of three stages, namely preparation of the region of interest, spine segmentation, and spine curvature quantification.
- The experimental results show that the automatic measures are very close to and consistent with the best manual measurement results by annotators.
- The test results also demonstrate the effectiveness of the curvature quantification produced by the proposed solution in distinguishing abnormally shaped spines from the normal ones with accuracy up to 98.6%.
- The solution can be also applied on low quality X-ray images of human.
- The implementation has been made publically available

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