

## **SOFTWARE TOOLS FOR MEDICAL DIAGNOSIS SUPPORT: AUTOMATIC INTERPRETATION OF DIGITAL X-RAY FILMS**

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The use of digital image processing as a medical diagnosis aid is now well established, being slowly but successfully integrated directly within the medical imaging devices. The traditional use of digital image processing as a post-imaging technique is still interesting, especially for new approaches to classical applications or for pioneering new ones. Our studies in the field of near automatic interpretation of particular X-ray types showed the possibility of performing various diagnostic-relevant tasks, such as grading the bone mass density based on the texture of the calcaneal bone, the analysis of the fit of un-cemented total hip prostheses and the investigation of the mammographic masses. The particular nature of the physics underlying the image acquisition in X-ray films suggested the use of new software tools based on a modified version of the classical Logarithmic Image Processing (LIP) model. We will show that the modified logarithmic operations allow, among other, fast and precise contour extraction in various situations.