

# SYMBOLIC MANIPULATION AND BIOMEDICAL IMAGES

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ABSTRACT. Discrete Morse theory is an efficient method which allows one to study the topology of discrete objects. The instrumental tool in the algebraic setting of this theory is the notion of *admissible discrete vector field*. In this paper, we present a *formally verified* implementation of an algorithm in charge of building an admissible discrete vector field from a *digital image*. Such a program will play a key role to analyze *biomedical images*.

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