

# 3D Cardiac Strain Analysis

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## BRIEF DESCRIPTION

An advanced geometric method for comprehensive 3D cardiac strain analysis, enhancing diagnosis and monitoring of myocardial diseases.

## FULL DESCRIPTION

This technology introduces a geometric method for computing 3D cardiac strain using endocardial and epicardial surfaces obtained from medical images. By calculating all six components of normal and shear strain at each location, it provides a detailed description of myocardial strain patterns. This method surpasses the limitations of current 2D and segmental strain analyses, offering a complete 3D finite deformation analysis for improved clinical assessments.

## SUGGESTED USES

- Diagnostic support for cardiologists in detecting and monitoring of myocardial diseases.
- Integration into existing medical imaging platforms for advanced diagnostic capabilities.
- Research tool in cardiology for studying myocardial structure and function.
- Enhanced cardiac care through improved follow-up assessments with detailed strain analysis.

## ADVANTAGES

- Enables detailed 3D analysis of cardiac strain, offering a full view of myocardial deformation.
- Calculates all six components of normal and shear strain for comprehensive analysis.
- Provides better spatial resolution compared to current commercial techniques.
- Facilitates assessment of subtle changes within myocardial thickness and fiber orientation.
- Improves diagnosis and monitoring of sub-clinical myocardial diseases.

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## OTHER INFORMATION

### KEYWORDS

medical imaging, cardiac strain analysis

### CATEGORIZED AS

- » **Biotechnology**
  - » Health
- » **Computer**
  - » Software
- » **Imaging**
  - » Medical
- » **Medical**
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