Title: "Investigation on Deep Learning Methods for Heart Image Analysis: Progress, Implications, and Prospects for the Future"

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Dataset Documentation: Task02_Heart

1. Overview
  - Title: Task02_Heart
  - Source: Medical Segmentation Decathlon
  - Provided by: King's College London, United Kingdom
  - Dataset URL: [Medical Segmentation Decathlon](https://decathlon-10.grand-challenge.org/)
  - Related Publication: [Nature Article](https://www.nature.com/articles/s41467-022-30695-9)

2**. Dataset Description**
  - Objective: The Task02_Heart dataset is aimed at facilitating the development and benchmarking of algorithms for heart image analysis, specifically focusing on MRI datasets.
  - Applications: This dataset is crucial for advancing research in medical image segmentation, particularly for cardiac imaging and analysis.

3. **Image Acquisition**
  - Modality: MRI (Magnetic Resonance Imaging)
  - Scanner: 1.5T Achieva scanner (Philips Healthcare, Best, The Netherlands)
  - Voxel Resolution: 1.25 x 1.25 x 2.7 mm³
  - Acquisition Details: Images were acquired covering the entire heart during a single cardiac phase, involving free breathing with respiratory and ECG gating.

4. **Data Contents**
  - Number of Datasets:30 MRI datasets
  - Segments Included: Left atrium appendage, mitral plane, and portal vein end points.
  - Segmentation Method:Initially segmented by an automated tool, followed by expert manual correction.

5. **Data Processing**
  - Format Conversion: Conversion from DICOM to NIfTI (Neuroimaging Informatics Technology Initiative) format for ease of access and interoperability.
  - Standardization: Reformatted to ensure consistency across datasets.

6. **Data Availability and Licensing**
  - Download Link: [Download Task02_Heart Dataset] (http://medicaldecathlon.com/)
  - License: Creative Commons CC-BY-SA 4.0
  - Usage Terms: Data can be shared, redistributed, and improved upon for non-commercial purposes. Proper credit must be given with a citation to the original paper, along with a link to the license and an indication of any changes made.

7. **Citations and Acknowledgments**
  - Primary Citation: [Article in Nature] (https://www.nature.com/articles/s41467-022-30695-9)
  - Dataset Citation: To be cited as provided in the Medical Segmentation Decathlon guidelines.