MEDICAL SENSORS

PROJECT REPORT

PET/CT Image Denoising and Segmentation based on a Multi Observation and Multi Scale Markov Tree Model

October 25, 2016

Yeman Hagos
Vu Hoang Minh

Contents

Chapter 1

Introduction

ψ,

$$\psi_{jk}(x) = 2^{\frac{j}{2}} \psi\left(2^j x - k\right)$$

Chapter 2

Literature Review

2.1   HMT

kjsahdkjlashlkd

2.2   WAVELET TRANSFORM

2.2.1   Overview

Wavelet transforms have become increasingly important in digital signal processing and image processing since wavelets allow both time and frequency analysis simultaneously. The use of wavelets for these purposes is a recent development, although the theory is not new. The principles are similar to those of Fourier analysis, which was first developed in the early part of the 19th century.

In signal processing, wavelets make it possible to recover weak signals from noise . This has proven useful especially in the processing of X-ray and magnetic-resonance images in medical applications. Images processed in this way can be "cleaned up" without blurring or muddling the details.

2.2.2   Definition

A function $\psi \in L^2(\mathbb{R})$ is called an orthonormal wavelet if it can be used to define a , that is a $L^2(\mathbb{R})$ of

2.3   CONTOURLET TRANSFORM

2.4   PET IMAGE DENOISING

2.5   PET/CT Image Segmentation

Chapter 3

Implementation

Chapter 4

Result and Discussion

Chapter 5

Conclusion

REFERENCES