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I Introduction

The wavelet transform of coordinate functions is a linear operator. As a result, the coefficients of the wavelet transform are determined by the function. The number of significant wavelet coefficients of the function, i.e., the number of wavelet coefficients whose magnitude is above a certain threshold, is a measure of the accuracy of the wavelet transform [3].

In order to estimate the wavelet transform of a data set, one is led to consider the wavelet transform of the function. The calculation of the wavelet transform of a function is a well-known problem.

In the case of the addition of the product of function in the case of the coefficient of the product of the function may be written as $\frac{1}{4}[(+)^2 - (-)^2]$.

It appears that the tag for the coefficient of the product of the function, to the right and left of the function, to the right of the coefficient.

$$C_{k;k;l}^{j;j';m} = \int_{-\infty}^{+\infty} (j, k) (j', k') (m, l) dM$$

See $(j, k) = -j = 2 - j - 1$ as the function. The coefficient $C_{k;k;l}^{j;j';m}$ does not depend on the value of the non-zero coefficient j and, at the same time, the operation to the right of the function to N_s^3 , the N_s is the value of the significant coefficient in the representation of j .

In a number of applications the function of the function that are being associated at a location. The value of the significant coefficient of the function (j, k) on each case of N_s is the operation to the right of the function.

II Multiresolution algorithm for evaluating u

Let $\{V_j\}_{j \in \mathbb{Z}}$ be a multiresolution analysis of $L^2(\mathbb{R})$. Let $\phi \in V_0$ be the scaling function and $\psi \in V_1$ be the wavelet function.

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o

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→ $o(n^2)$ SS

Let t and u be constants

ca e — , e ca , te e d e e nce and ave age d_k^{j+1} and k^{j+1} . et en add k^{j+1} to k^{j+1} efo e e , and ng t f te acco dng to te fo o ng , y n d c h e

$$\begin{array}{ccccccc} \{\hat{1}_k\} & \longrightarrow & \{\hat{2}_k\} & \longrightarrow & \{\hat{2}_k\} + \{\hat{2}_k\} & \longrightarrow & \{\hat{3}_k\} \longrightarrow \{\hat{3}_k\} + \{\hat{3}_k\} \dots \\ & \searrow & & & & \searrow & \\ & & \{d_k^2\} & \longrightarrow & \{d_k^2\} + \{\hat{d}_k^2\} & & \{d_k^3\} \longrightarrow \{d_k^3\} + \{\hat{d}_k^3\} \dots \end{array} \quad (3)$$

te e fo n a fo e va atng te d e e nce and ave age d_k^{j+1} and k^{j+1} n ay e fo nd n [3]. A a e t, e ca , te d_k^j — $M M$, e et $d_k^j = 0$ and k^j and o t a n

$$\sum_{j=1}^n \sum_{k \in \mathbb{Z}} (\hat{d}_k^j + d_k^j) (k^j) + \sum_{k \in \mathbb{Z}} (n_k + \hat{n}_k + \hat{n}_k) (k^j) \quad (4)$$

te cea, t at te n e of o e at on fo ca , tng te aa e e an on of 2 o o t on a to te n e of gn f cant coe f c e n t d_k^j n te ave e e an on of o. n te o t ca e, f te o g na f n c t on e e e n t e d y a v e c t o r of te en g t N , t e n te n e of o e at on o o o t on a to N . f te o g na f n c t on e e e n t e d y $(\mathbb{Z}_2 N)$ gn f cant aa coe f c e n t, t e n te n e of o e at on to ca , t e t a e o o t on a to $\mathbb{Z}_2 N$. te a o t n n te aa a e a y g e n e a z e to t e n t e n o n a c a e.

o n u^2 n s s

e no et n to te g e n e a c a e of ave e t and de ve an a g o t n n to e e and (4) n to te ave e t a e. n e n te c a e of te aa a e, te o d c t on a g e n c a e o e n to te n e c a e and e d e o e an e f c e n t a p o a c to and e t o o n. e e ca , t a c t y o t e d ave e t to g o c o n d e a t o n a e n o t e t c t e d to c ave e t. e d e n o t e t e c a n g f n c t o n y and te ave e t y. te ave e t a t t e n g e n y $(k^j) = \sum_{i=2}^j (-1)^{i-1} M \in \mathbb{Z}$ e e [8]. e c o n d e t e n t e o t o n a n a y a a o c a t e d t c a e.

n o d e to e e and e a c t e n n (4) n to te ave e t a e ave e d to c o n d e t e n t e s a o f t e o d c t of t e a f n c t o n, fo e n e

$$M_{www}^{jj'} M' M - \int_{-\infty}^{+\infty} (k^j) (k^{j'}) (i^{j'}) d M \quad (5)$$

e e ' ≤ . te cea, t at te coe f c e n t $M_{www}^{jj'} M' M$ a e d e n t c a y z e o fo | - ' | > 0, e e o d e e n d o n t e o e a p of t e o t of t e a f n c t o n. te n e n e of n e c e a y coe f c e n t n ay e e d c e d f t e y o e v n g t a t

$$M_{www}^{jj'} M' M - \sum_{i=2}^j \int_{-\infty}^{+\infty} (k^{j-i}) (k^{j-i'}) (i^{j-i'}) d M \quad (6)$$

not at

$$M_{\mathbb{W}\mathbb{W}\mathbb{W}}^{j,j'} - M'_{\mathbb{W}\mathbb{W}\mathbb{W}} - \int_{-\infty}^{+\infty} \tilde{M}_{\mathbb{W}\mathbb{W}\mathbb{W}}^{j-j'} - (M^{j-j'} - \dots) \quad (1)$$

the coefficient in (1) decay at the distance $-\dots$ between the case \dots and \dots

$$\tilde{M}_{\mathbb{W}\mathbb{W}\mathbb{W}}^r - (M^r - \dots) - \int_{-\infty}^{+\infty} \dots \quad (8)$$

and each of the \dots of the product \dots increase linearly with the \dots of the function \dots

$$|\tilde{M}_{\mathbb{W}\mathbb{W}\mathbb{W}}^r - (M^r - \dots)| \leq C^{-rM} \quad (9)$$

see [8], [9].

Let us define the distance between the case \dots at a given \dots coefficient in (9) \dots , \dots , \dots and \dots of the \dots and \dots

$$M_{\mathbb{V}\mathbb{W}}^j : \mathbb{V}_j \times \mathbb{W}_j \rightarrow \mathbb{V}_j \oplus \mathbb{W}_j, M \quad (10)$$

and

$$M_{\mathbb{W}\mathbb{W}}^j : \mathbb{W}_j \times \mathbb{W}_j \rightarrow \mathbb{V}_j \oplus \mathbb{W}_j, M \quad (11)$$

since

$$\mathbb{V}_j \oplus \mathbb{W}_j = \mathbb{V}_{j-1}M \quad (12)$$

and

$$\mathbb{V}_j \subset \mathbb{V}_{j-1}M, \mathbb{W}_j \subset \mathbb{V}_{j-1}M \quad (13)$$

we may consider the linear mappings (10) and (11) on $\mathbb{V}_{j-1} \times \mathbb{V}_{j-1}$. The evaluation of (10) and (11) are

$$\mathbb{V}_{j-1} \times \mathbb{V}_{j-1} \rightarrow \mathbb{V}_{j-1}M \quad (14)$$

We need significantly the coefficient in (10) and (11). Indeed, it is sufficient to consider the coefficient

$$M_{\mathbb{V}\mathbb{W}}^j - \int_{-\infty}^{+\infty} \dots \quad (15)$$

and it is easy to see that $M_{\mathbb{V}\mathbb{W}}^j - \int_{-\infty}^{+\infty} M_0 - (M' - \dots)$, where

$$M_0 - \int_{-\infty}^{+\infty} \dots \quad (16)$$

to get a more efficient and more accurate method of linearization to find $M_0(M)$, we advocate a different approach to evaluate the next iteration.

Let us now consider the case of computing C and D in a more efficient manner. In a given case the procedure of "fitting" the object into a "fine" accuracy is achieved by the method of contact angles (see e.g. [3]).

Let us set at once a number of the coefficient of j as a vector of accuracy. We note here that for the case of j at contact to the object (j, j) , a vector of j need to be set. In fact, one may consider the function

In tead of (4), it is convenient to consider the mapping

$$\mathbf{V}_0 \times \mathbf{V}_0 \rightarrow \mathbf{V}_0 \quad (7)$$

It is easy to see that for $\mathbf{v} \in \mathbf{V}_0$,

$$\mathbf{v} = \sum_{\mathbf{k}} \mathbf{k} \cdot \mathbf{v} \quad (8)$$

The value of the integral in (8) is -9.3595×10^{-10} (for $t = 1.389 \times 10^{-10}$) and 6.8396×10^{-10} (for $t = 6.8396 \times 10^{-10}$).

References

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