

Wavelets have become a very important tool in the field of image analysis. There are two main approaches to using wavelets: the time domain approach, and spatial domain approach. When the aim of analysis is to obtain the information about the dynamics of the signal, wavelets are used in the time domain. This can be helpful for analyzing smoke dynamics in an image sequence. When used in spatial domain wavelets provide information about the texture property of smoke. Some of the articles that use wavelets for smoke detection are listed here:

Z. Xu, J. Xu,

"Automatic Fire Smoke Detection Based on Image Visual Features",

Proceedings of the 2007 International Conference on Computational Intelligence and Security Workshops, 316-319, 2007.

<http://www.computer.org/portal/web/csdl/doi/10.1109/CIS.Workshops.2007.55>

B. U. Toreyin, Y. Dedeoglu, A. E. Cetin,

"Wavelet based real-time smoke detection in video",

EUSIPCO '05, 2005.

<http://www.ee.bilkent.edu.tr/~ugur/eusipco2005.pdf>

B.Toreyin, Y. Dedeoglu, A. Cetin,

"Contour Based Smoke Detection in Video Using Wavelets",

European Signal Processing Conference, 2006.

http://www.ee.bilkent.edu.tr/~ugur/eusipco2006_2.pdf

P. Piccinini, S. Calderara, R. Cucchiara,

"Reliable smoke detection system in the domains of image energy and color",

International Conference on Image Processing, 2008.

<http://www-video.eecs.berkeley.edu/Proceedings/ICIP2008/pdfs/0001376.pdf>

