

Markov models are a tool which has been successfully used in different areas such as speech recognition, machine translation, gene prediction and recently in computer vision. Markov models can be used in the detection process due to dynamic aspect of smoke characteristics, with selection of appropriate features that adequately describe the model state. Examples of Markov model applications in smoke and fire detection are given these articles:

(Smoke detection with Markov models using wavelet coefficients as input)

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

"Contour Based Smoke Detection in Video Using Wavelets",

European Signal Processing Conference, 2006.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.105.3515&rep=rep1&type=pdf>

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(Example of flame detection using Markov models)

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

"Flame detection in video using hidden Markov models",

Image Processing, ICIP 2005, 1230-1233, 2005.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.99.8921&rep=rep1&type=pdf>

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