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CHLAC

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Extraction and Recognition of Repetitive Cooking Motion Segments in Cooking Video by Periodicity Analysis of CHLAC Feature

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Abstract This paper proposes a method for extracting segments that contain repetitive cooking motions such as ñcutting ò and ñmixing ò from cooking videos, and for recognizing the cooking motions in the segments. The proposed method extracts repetitive cooking motion segments by two types of features; One is a feature that depends on the location of the motion within video frames and the other is a feature invariant to the location. As a result, high identification accuracy is expected to be maintained on both a repetitive motion whose oscillation center moves along time and a repetitive motion with a constant oscillation center. Next, the proposed method analyses the periodicity of these feature values by Fourier transform and extracts the segments. On the other hand, in cooking motion classification, considering that the location of the cooking motion within video frames is various, the proposed method classifies the repetitive cooking motion segments by using a feature value invariant to the location of the motion within video frames. In an experiment for extracting segments that contain repetitive cooking motions, the method obtained an accuracy of 0.78, and for cooking motion classification, an accuracy of 0.77 was obtained. From these results, the effectiveness of our method was shown.

Keyword Cooking video, motion analysis, CHLAC feature, Fourier analysis

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[1] http://cookpad.com

[2] http://www.nintendo.co.jp/ds/a4vj

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「 加える」　「 こねる」

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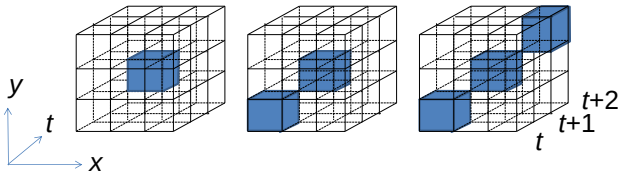

3　CHLAC　3

2.1. CHLAC

CHLAC　Cubic Higher-order Local Auto-Correlation

[4]

CHLAC

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CHLAC

CHLAC

2

CHLAC

P(f_p) ず

f f_0 っ

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f_0 f f_1 P(f)

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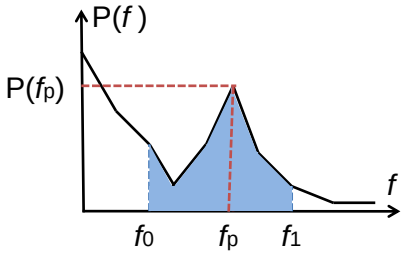
CHLAC 2 ず



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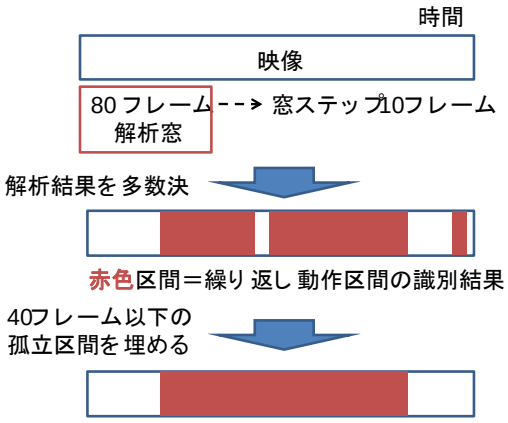

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