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Color Based Recognition and Estimation of Temperature Levels of Images of Boiled Food Grains

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ABSTRACT

Automated food processing and evaluation is considered a significant research area in computer vision. The development of automated cooking and food serving by robots is envisaged as part of automated food processing and temperature plays a major role in cooking Indian foods. The delicious Indian foods are generally boiled or fried with other ingredients. The boiled grains like Bengal Gram, Black Gram, Green Gram, Red Gram and Toor Dal are part of typical Indian foods and taste differently, when boiled or cooked at different temperatures and periods of time. Therefore, identifying the effect of boiling and automatic recognition of images of boiled food grains is presented in this paper. The boiling temperatures chosen are 40^0 C, 50^0 C, 60^0 C, 80^0 C and 100^0 C. A color feature centered knowledge based classifier is proposed. The classification accuracy observed is high at lower and higher temperatures and low at medium temperatures. The work finds applications in automatic inspection of food preparations in food industries, drug preparation in pharmaceutical industries, automatic serving, cooking and monitoring of foods in restaurants and motels.