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Livro de resumos

Beef quality evaluation system

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Abstract

Applying computer vision in meat quality evaluation has been an active area of research in recent years. Accurate segmentation of beef-marbling images plays an important role in making the correct decision on beef-marbling score in an automatic beef quality grading system. The purpose of this study was to develop a new segmentation method to correctly separate the fat flecks from the muscle in the rib-eye region in a beef image. The key idea is to measure the percentage of marbling in the muscle to obtain a beef quality evaluation system.

Samples were obtained from carcasses in Terra Fria Carnes slaughter house. The materials included 83 cross sections in the standard location for measuring marbling.

The proposed framework used to design automatic all computer vision system for beef quality evaluation consists of five steps: Image acquisition: a digital image of the beef under test is taken; Pre-processing: the digital image is improved in order to enhance the details; Segmentation: the region of interest(LD muscle) is found and isolated from the background of the scene; Feature extraction/selection: significant features of the beef are extracted in order to isolate the muscle and the marbling and classification: the extracted features are measured automatically in order to evaluate its quality.

From the experimental results, it has been confirmed that the proposed system enables high quality grading of beef marbling, and robust region segmentation of the actual beef rib-eye image in to lean and fat regions.

Keywords: computer vision system; beef quality; beef-marbling; percentage of marbling.