FISCEAPP: FIsh Skin Color Evaluation APPlication

Authors : J. Urban, Á. S. Botella, L. E. Robaina, A. Bárta, P. Souček, P. Císař, Š. Papáček, L. M. Domínguez

Abstract : Skin coloration in fish is of great physiological, behavioral and ecological importance and can be considered as an index of animal welfare in aquaculture as well as an important quality factor in the retail value. Currently, in order to compare color in animals fed on different diets, biochemical analysis, and colorimetry of fished, mildly anesthetized or dead body, are very accurate and meaningful measurements. The noninvasive method using digital images of the fish body was developed as a standalone application. This application deals with the computation burden and memory consumption of large input files, optimizing piece wise processing and analysis with the memory/computation time ratio. For the comparison of color distributions of various experiments and different color spaces (RGB, CIE L*a*b*) the comparable semi-equidistant binning of multi channels representation is introduced. It is derived from the knowledge of quantization levels and Freedman-Diaconis rule. The color calibrations and camera responsivity function were necessary part of the measurement process.

Keywords : color distribution, fish skin color, piecewise transformation, object to background segmentation

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