Sturgeon sex Identification using ultrasound image processing and fuzzy neural networks

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Abstract Sturgeon are one of the national capital and economic resources. On the other hand, they are very high maintenance costs. Since the female of the species is more economically valuable species of fish, in order to reduce maintenance costs, determine their sex at an early age is essential. Unfortunately, in the form of a formal appearance and characteristics of the male and female sturgeon there is no difference. They used many methods to determine the sex. All these methods are based on the experience of the experts in the field. Sturgeon limb anatomy using ultrasound machine can review and determine their gender. In this study, an intelligent system is proposed to identify the gender of sturgeon using combination of the computer vision and artificial intelligence tools. Sturgeon gonad is diagnosed using ultrasound images feature extraction and neuro-fuzzy network. In this study, 115 samples of fishes fisheries Shahid Beheshti center of Gilan province were studied, 55 of them female and 60 of them were male. The proposed system recognized the 3-years-old sturgeon of this center gender with 95.81% accuracy. Keywords: Sturgeon ultrasound images feature extraction neuro-fuzzy system.

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