

**Klasifikasi Kualitas Ikan Mujair pada Tambak Kalisogo di Sidoarjo dengan
Menggunakan Metode Convolution Neural Network**

(Classification of Mujair Fish Quality at Kalisogo Ponds in Sidoarjo Using the
Convolutional Neural Network Method)

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ABSTRACT

Manual sorting of Mujair fish at Kalisogo Ponds, Sidoarjo, lacks consistency and time efficiency. This research develops an AI-based automated sorting conveyor system to address these issues. The system integrates the YOLOv8n Convolutional Neural Network (CNN) algorithm for visual dimension extraction and an HX711 *load cell* sensor for precise weight measurement. Additionally, it features a Laravel Filament-based monitoring *dashboard* for *real-time* data logging and revenue estimation. Field testing on 36 fish samples demonstrated excellent performance, achieving 88.89% *Accuracy*, 86.96% *Precision*, 95.24% *Recall*, and a 90.91% *F1-Score*. These results prove that combining *computer vision* with a mechanical conveyor significantly improves sorting objectivity and efficiency, offering a practical solution for local pond cultivators.

Keywords: *Convolutional Neural Network, YOLOv8n, Conveyor, Load Cell, Fish Classification, Laravel.*