Automatic Water Temperature and pH Monitoring and Pellet Feeding System

for Gourami Fish Using Fuzzy Logic Method

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ABSTRACT

This research designs and implements an automatic system for monitoring water quality and feeding in gourami aquaculture using Internet of Things (IoT) and fuzzy Tsukamoto logic. The system uses DS18B20 temperature and pH sensors to detect water conditions in real-time, with an ESP32 microcontroller acting as the control hub and web interface integrator. Feeding is controlled automatically via a servo motor based on fuzzy logic calculations involving fish age and population. Testing results indicate that the system operates accurately and responsively in monitoring environmental parameters and optimizing feeding schedules. This system is expected to improve farming efficiency and support sustainable fish growth.