# AUTOMATED CONVEYOR SYSTEM DESIGN FOR IOT-BASED CHICKEN EGG COUNTING AND SORTING

**DIMAS FEBRIYANSYAH**
*Electrical Engineering Study Program, Faculty of Science and Technology*
*University of Technology Yogyakarta*
*Jl. Ringroad Utara Jombor Sleman Yogyakarta*
*E-mail: febriyansyahdimas15@gmail.com*

**ABSTRACT**

This study presents the *design and development of an automated conveyor system for IoT-based chicken egg counting and sorting*. The system is engineered to streamline the egg sorting process and automate egg quantity logging. A DC motor is utilized as the conveyor's drive mechanism, while an infrared proximity sensor detects egg presence with a maximum sensing range of approximately ±60 cm, achieving a 100% detection success rate across ten trials. For weight measurement, the system incorporates a load cell integrated with an HX711 module, yielding an average error margin of just 0.32% compared to a digital scale. A servo motor enables precise egg sorting into left containers (for eggs weighing less than 60 grams) or right containers (for eggs weighing more than 60 grams), demonstrating 100% accuracy in ten test cycles. All measurement and classification data are transmitted in real time via the MQTT broker (broker.emqx.io), supporting IoT-based monitoring. The results confirm the system's high reliability and accuracy, making it a viable solution for small to medium-scale poultry farms.

**Keywords**: automated conveyor, load cell, servo motor, IoT, egg sorting.