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INNOVATIVE AUTOMATIC CLOTH SHELTERING SYSTEM USING RAINDROP SENSOR

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ABSTRACT

Rain can unexpectedly soak clothes left outside, causing inconvenience and delays in the drying process. To address this issue, this study developed an automatic cloth sheltering system using a raindrop sensor, an Arduino Uno microcontroller, and a micro servo to detect rainfall and automatically move garments under shelter without human intervention. The system was evaluated based on response time, accuracy, and effectiveness, with experimental results showing an average rain detection time of 0.17 seconds and an activation time of 0.3475 seconds, ensuring quick and efficient protection. Multiple trials confirmed that the hanging rod moved 90 degrees, fully covering the clothes, demonstrating the system's efficiency in preventing garments from getting wet. By automating this process, the system offers a practical and time-saving solution for individuals who need a more efficient way to protect their laundry. Additionally, the study provides valuable insights into optimizing sensor-based automation for household applications, paving the way for future enhancements in functionality and efficiency.