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IoT Industrial Fault Detection System

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Abstract: *A Factories today rely heavily on machines watched by people - slow work, full of mistakes. When things go wrong, production stops. Often, danger follows close behind. A new setup swaps eyes and guesses for sensors wired into an Arduino Uno, linked up with an ESP8266 chip. Temperature shifts, odd noises, rising gas, power draw changes, shaky movements - all caught fast. No waiting around. Data gets checked right there, at the machine itself. If numbers cross red lines? A buzzer screams nearby. All readings fly through air to show live on a website screen. No delays worth counting. Tests ran tight: nearly 97 out of 100 faults spotted correctly. Signals arrive in less than three heartbeats. Built like Lego blocks - one piece fails, swap it without breaking the rest. Cheap to build, fits small shops or giant halls alike. Watch systems breathe, hum, heat up - and know before they break..*

Keywords: Industrial IoT, Fault Detection, Arduino Uno, ESP8266, Real-Time Monitoring, Smart Factory, Sensor Fusion, Edge Computing

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