

**REAL-TIME INTEGRATED SMART BUILDING MONITORING SYSTEM WITH
PRIORITIZED ALERTS**



UNDERGRADUATE THESIS

**Submitted as one of the requirements to obtain
Sarjana Komputer (S.Kom)**

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**FACULTY OF COMPUTER SCIENCE
INFORMATICS STUDY PROGRAM**

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GPT ZERO RESULTS

The screenshot displays the GPTZero AI Detection web application. On the left is a sidebar with navigation icons for 'New', 'Home', 'Documents', and 'More'. The main content area is divided into a document editor on the left and a results panel on the right.

Document Editor:

- Name:** Individual Report Ghina.docx
- Author:** Ghina Fariha Rahman
- Title:** Real-Time Integrated Smart Building Monitoring System with Prioritized Alerts
- Subtitle:** A Thesis
- Description:** Submitted to the Faculty of Computer Science President University in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Informatics
- By:** GHINA FARHA RAHMAN
- ID:** 001202200160

Results Panel:

- Basic scan** (with 'Share' and 'Export' buttons)
- AI Detection:** GPTZero AI Detection (Model 3.5b)
- Result:** A green circular progress indicator labeled 'human'.
- Confidence Statement:** We are highly confident this text is entirely human.
- Probability breakdown:**
 - 2% AI generated
 - 0% Mixed
 - 98% Human

At the top right of the interface, there are buttons for 'Feedback' and 'Upgrade', and a status bar indicating '4K credits of 10K remaining'.

ABSTRACT

Technological innovations have guided the design of new structures towards more intelligent ecosystems that are concerned with operating efficiency, user comfort, and sustainability. With this comes the emergence of new problems, such as in poorly integrated security systems. Most buildings still rely on the application of conventional security systems which endlessly demand constant human supervision—a wasteful and error-prone process. When they fail, the lack of near-real-time data makes it difficult for operators to respond in a timely and correct way, so that small issues become big issues that have an impact on safety, comfort, and operating cost. Apart from that, a failure to adequately prioritize will lead to information overload, unnecessary alerts, and disruptions among the residents. Slowness in coordinating emergency teams is a consequence of a lack of automatic alerting and imperfect integration among the monitoring subsystems. Data security and access control are also significant issues today due to widespread cyber attacks. To prioritize these matters, a wise real-time monitoring system is proposed. The system incorporates an AI module that can detect suspicious objects and assign tags on them—low, medium, or high. On incidents with medium- and high-priority, alarms are automatically raised through Discord in a bid to enable response in a timely fashion by security agents. The solution enhances building management efficiency, minimizes incident response time, and enhances the comfort, safety, and reliability of building users' environment for facility managers.

Keywords: monitoring system, object detection, priority classification, notification alerts.

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