

MICHI: AI-POWERED ROBOT FOR GUEST MANAGEMENT AND ASSISTANCE

UNDERGRADUATE THESIS

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

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ABSTRACT

The need for a professional and efficient guest experience is more important than ever for businesses today. At PT Bintang Toedjoe, how well they welcome and assist guests shows the company's values and its efforts to keep growing. However, there are still issues in ensuring every visitor gets the right help, information, and attention-especially when there aren't enough staff or they are busy with other tasks. This can leave guests feeling ignored or confused during their visit.

Therefore, to solve this problem, an AI-powered interactive robot was created to help manage interactions with visitors more effectively and efficiently. The robot can greet visitors, answer questions about the company, and perform fun gestures. The robot was built using affordable components such as an ESP32 microcontroller. It uses gestures, sounds, and expressive features to make a lasting impression on guests. It uses a large OpenAI language model and real-time communication via MQTT to respond to voice commands, get company information, and track each conversation so that it can be improved over time.

Although the robot requires an internet connection and is sedentary, it is still easy to use for guests from different backgrounds. The robot is built to match the company's values by only talking about PT Bintang Toedjoe and not sharing unnecessary or personal information. Using the robot helps visitors stay focused during their visit and shows that the company is modern and cares about its guests. PT Bintang Toedjoe wants to make every visitor's experience more enjoyable, smooth, and satisfying with this system.

Keywords: PT Bintang Toedjoe, AI robot, ESP32, OpenAI, real-time interaction, MQTT, smart assistant, visitor support, robot interaction, technology, interactive system.

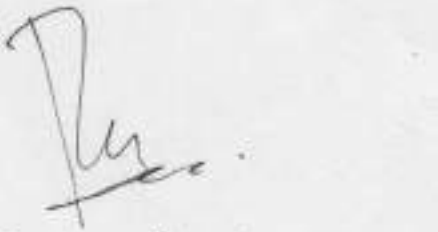
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1. My beloved parents for their endless support, prayers, and encouragement throughout my education and during the internship period.
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3. All of my partners who have helped me directly or indirectly for the success of the internship program and the preparation of this report.

I realize and I know that this report is still far from being perfect. Therefore, any criticism and suggestions are highly welcome for its improvement. Hopefully, this report will be beneficial for readers and future students .

Cikarang, 25-08-2025



(Rancaputra Bamardt Ashar)

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