

### SHAMBA BOT An AI Powered Chat Bot

#### Introduction

In Tanzania, agriculture plays a vital role in the lives of local citizens as it contribute to food availability and economic growth. Despite it's importance, agriculture sector face several challenges like soil losing it's fertility or which kind of crop to plant where. Currently, farmer use agricultural specialist to get information and assistance but the number of specialist in the country is very few compared to their demand. SHAMBA BOT intend to help farmers to get information and assistant so as to reduce the need of physically meeting specialist.



*A farm impacted by drought resulting in reduced productivity*

#### Objectives

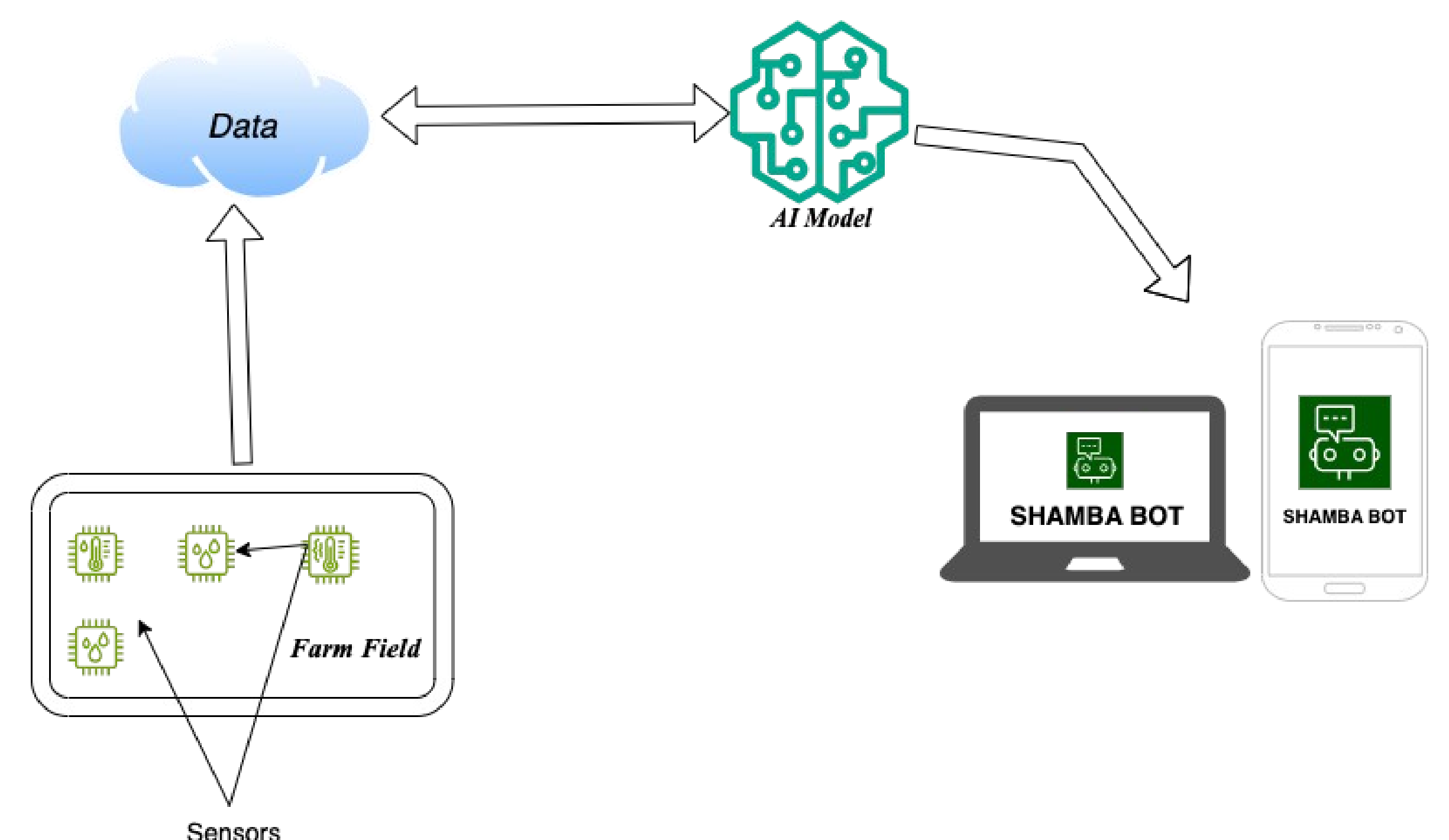
##### Main objective

To develop a chatbot which will work as agricultural specialist and it can be accessed anywhere at anytime.

##### Specific Objectives

- **Lower layer** – installing sensors to the farm which will collect soil nutrients, temperature and amount of water in a soil
- **Middle layer** – train machine learning model which will process and analyze the collected data from the sensor.
- **Upper layer** -provide an online and offline chatbot which will give farmer all the necessary information and assistant.

#### Methodology



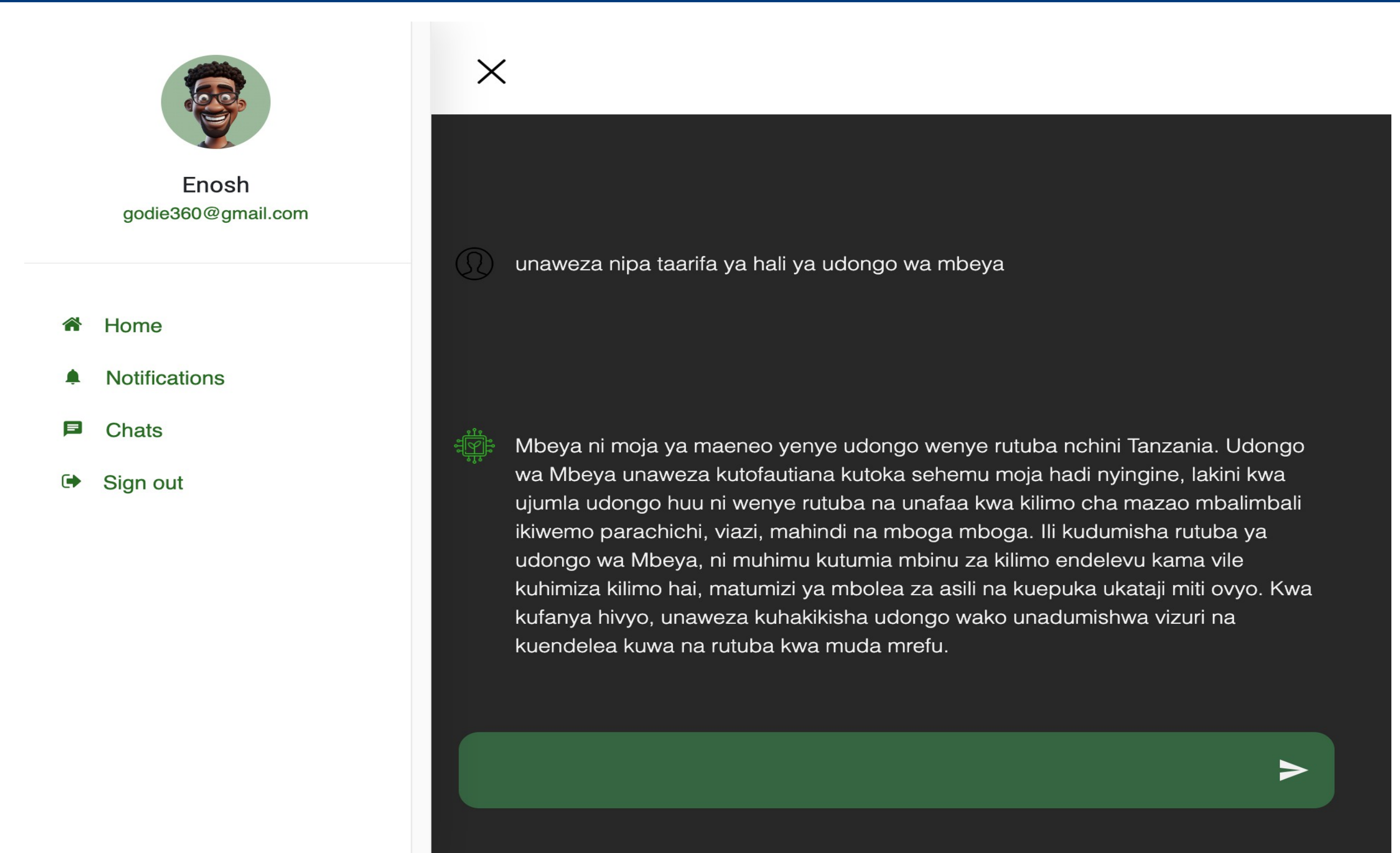
*Architectural Diagram for Development of Shamba Bot*

#### Solution



*Shamba Bot an offline chatbot via SMS*

Shamba bot will provide real time information regarding the condition of the farm and what to do if there is any problem. Not only that, the chatbot will be like agricultural specialist on which all the help and assistance will now be available anywhere at anytime.



*Shamba Bot an online chatbot web App*

#### References

- [1] Ekanayake, J. and Saputhanthri, L. (2020) "E-AGRO: Intelligent Chat-Bot. IoT and Artificial Intelligence to Enhance Farming Industry
- [2] Jayarathna, H. and Hettige, B. (2013) "AgriCom: A communication platform for agriculture sector", Conference paper: Agricultural Communications Documentation Center (ACDC), USA: IEEE, New York City, New York, pp. 439-444. DOI 10.1109/ICIIInfS.2013.6732024.
- [3] E. Haller and T. Rebedea, "Designing a Chat-bot that Simulates an Historical Figure," 2013 19th International Conference on Control Systems and Computer Science, Bucharest, 2013.

#### Way forward

- We considered both farmers with internet access, who will use an online chatbot, and those without will use an offline chatbot via SMS..