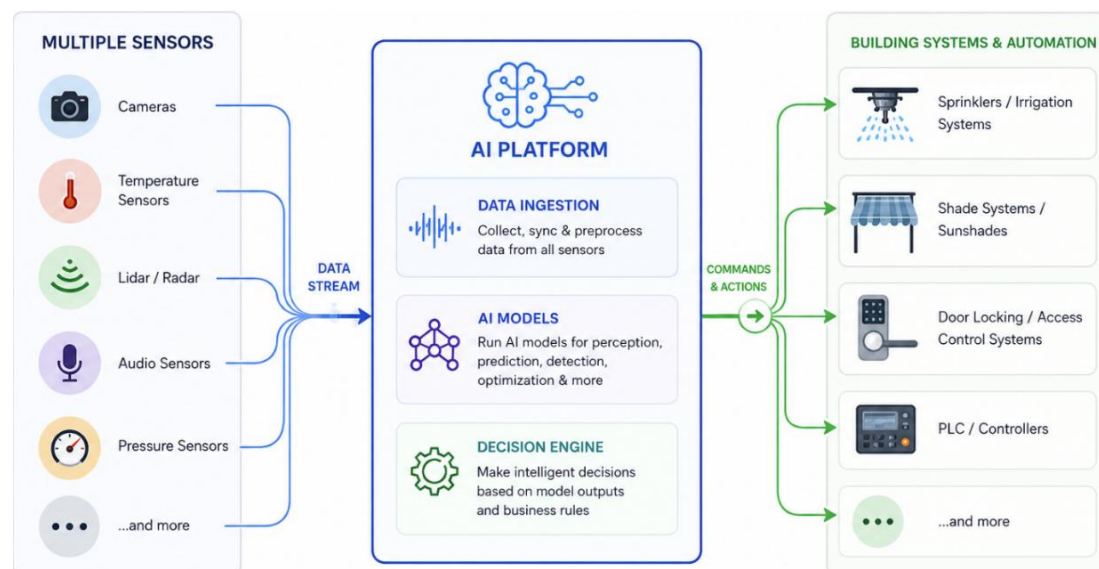


General System Overview

The UNISENSOR system operates in three stages:

1. **Data Collection** – Collects data from various types of sensors, cameras, images, and other connected devices.
2. **AI Analysis** – Processes the collected information using AI models to analyze the data and derive insights.
3. **Real-World Actions** – Takes actions in the physical environment using robots, air-conditioning systems, irrigation and fertilization systems, and other connected devices.

Diagram:

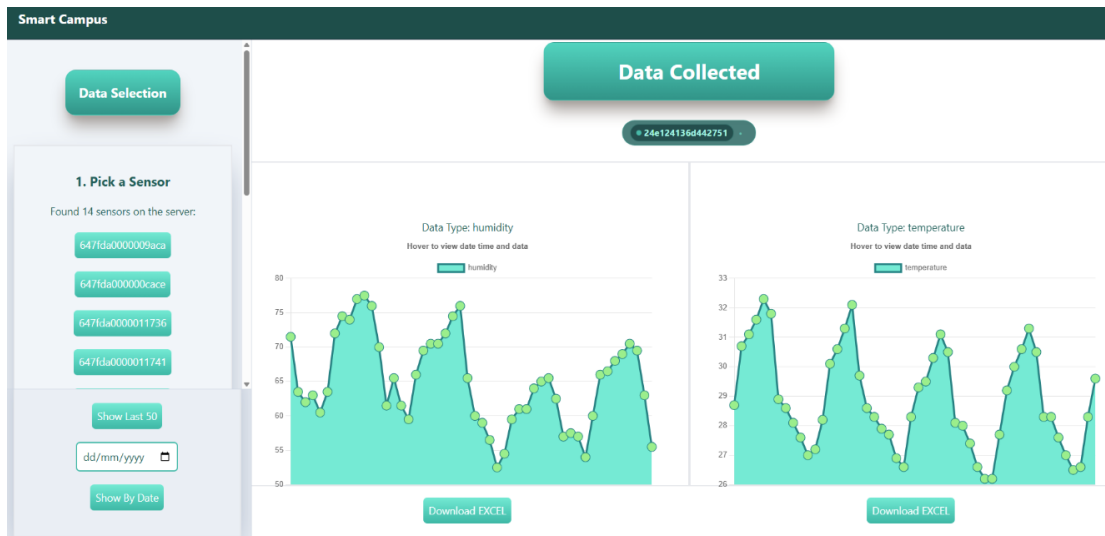


System Components

1. Data Collection

In the first section, users can select a sensor and view the collected data for a specific day or the 50 most recent reports.

The collected data can also be downloaded as an **Excel file** for further analysis or any other purpose.

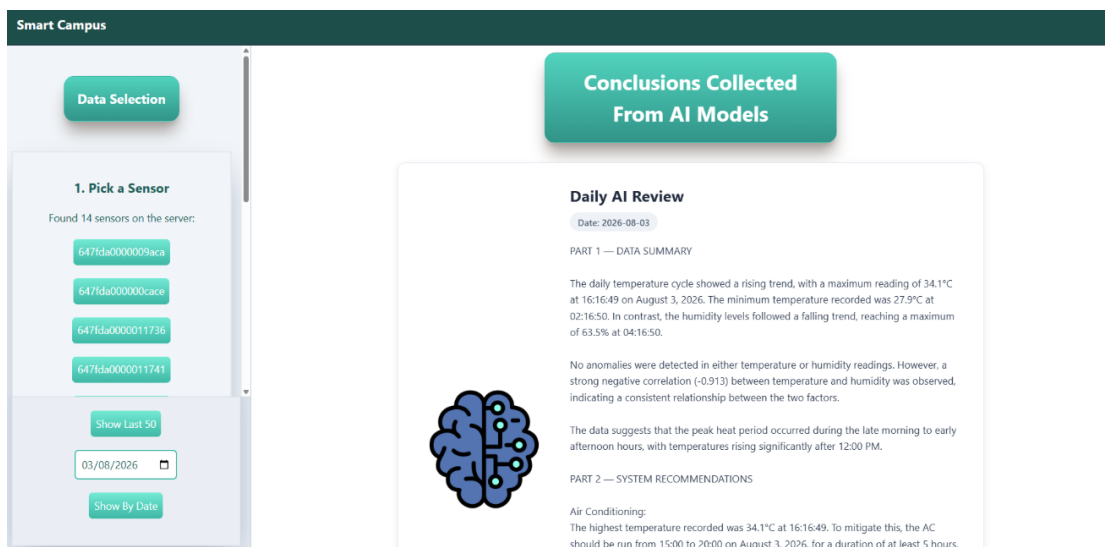


2. Viewing AI Insights

Users can view the analysis generated by a specific AI model that processes the daily data and provides an explanation of the information collected.

Users can also view analyses generated for previous days. Each analysis is available for a **specific day only**, as the model performs its analysis on a daily basis.

In the second part of the analysis, the model provides recommendations on how to operate the connected robots and systems. For example, it may recommend the optimal times to water the plants.



Full explanation:



Daily AI Review

Date: 2026-08-03

PART 1 — DATA SUMMARY

The daily temperature cycle showed a rising trend, with a maximum reading of 34.1°C at 16:16:49 on August 3, 2026. The minimum temperature recorded was 27.9°C at 02:16:50. In contrast, the humidity levels followed a falling trend, reaching a maximum of 63.5% at 04:16:50.

No anomalies were detected in either temperature or humidity readings. However, a strong negative correlation (-0.913) between temperature and humidity was observed, indicating a consistent relationship between the two factors.

The data suggests that the peak heat period occurred during the late morning to early afternoon hours, with temperatures rising significantly after 12:00 PM.

PART 2 — SYSTEM RECOMMENDATIONS

Air Conditioning:
The highest temperature recorded was 34.1°C at 16:16:49. To mitigate this, the AC should be run from 15:00 to 20:00 on August 3, 2026, for a duration of at least 5 hours.

Shading:
The peak heat period occurred between 12:00 and 17:00. Shading should be deployed during this time frame to provide relief from the intense sunlight.

Irrigation:
Given the low humidity levels (34% minimum) and high temperatures, irrigation is not necessary on August 3, 2026. However, if precipitation is expected or desired for plant growth, it's recommended to irrigate between 08:00 and 10:00, when both temperature and humidity are relatively lower.

3. Operating Solutions in the Field

The system currently includes a demo that is ready to operate three real-world solutions.

These solutions were developed by students.

Under each solution, there is a link to a video in which the students explain their project and demonstrate how it works.

The three systems are:

A. Irrigation

B. Shading

C. Air Conditioning

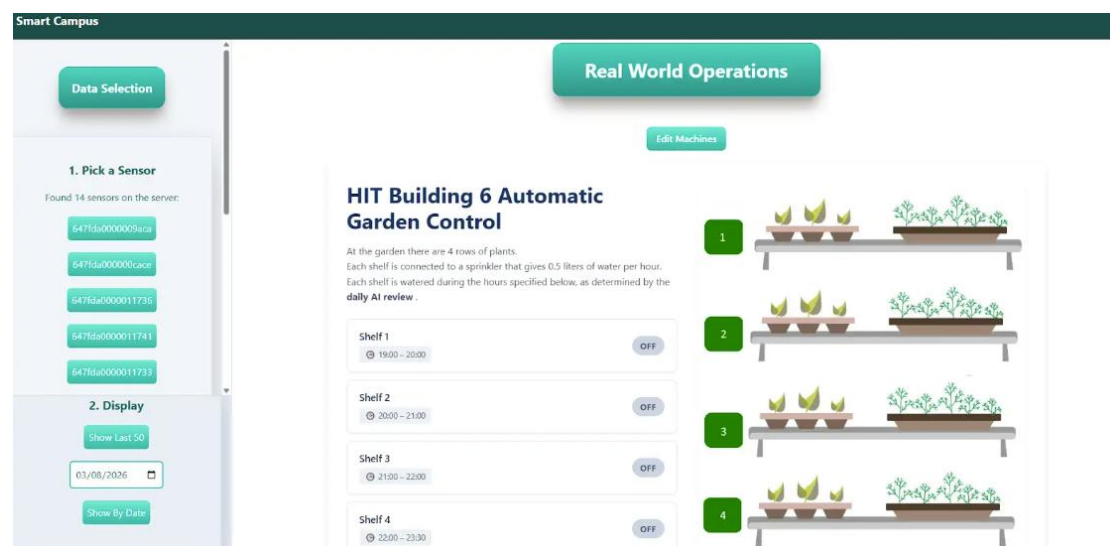
Each system can currently be operated manually based on the AI model's recommendations.

Once we have sufficient confidence in the AI models and their recommendations, the system will be able to automatically determine the operating times, similar to an autopilot system, without the need for human supervision.

A. Irrigation

The student-developed **ECO DRIP** system allows us to map the institute's irrigation infrastructure and control irrigation zones according to scheduled times.

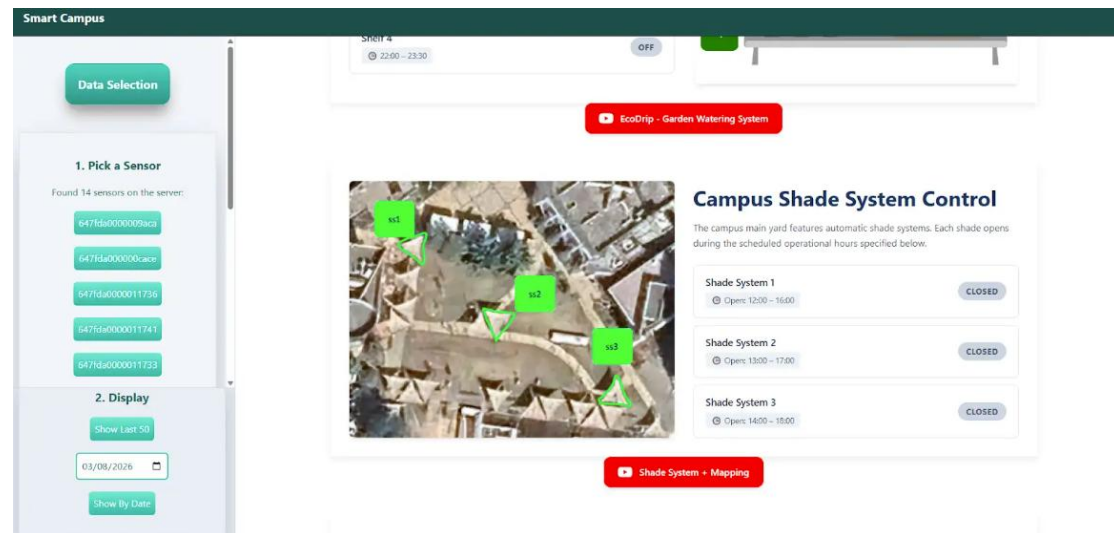
In the UNISENSOR demo, we operate four water pipes that irrigate the **herb wall installed in Building 6** at scheduled times. The irrigation schedule is determined based on the AI model's recommendations.



B. Shading

The student-developed **SHADE SYSTEM** performs a complete mapping of the institute's courtyards by simply uploading an image. Once the image has been uploaded and positioned, users can control the shading systems.

In the UNISENSOR demo, we operate three shading systems using **ON/OFF controls**, based on the AI model's recommendations.



C. Air Conditioning

The student-developed **HALL SENSE** system maps all the buildings of the institute or any organization, including each individual floor. The system allows motion-detection sensors to be installed throughout the mapped areas. In the UNISENSOR demo, we map one floor and install air-conditioning units that can be operated according to a schedule based on the AI model's recommendations.

