1 Hardware

In designing the embedded systems for our surveillance camera, we selected the ESP 32 Cam (AI thinker module) as our main camera device. The device includes a: ¡check the internet¿

- chip

- camera

- wifi module

- bluetooth module

- storage: RAM and SD-card slot

The ESP 32 Cam device is selected for its small size, little power consumption, and ability to interface with other systems in a network through its in-built wifi module. However, the ESP 32 cam has a low RAM storage, leading to poor picture quality and performance. The latter necessitates the use of an SD-Card to store images in the case of a stored-type surveillance system. Nevertheless, the ESP 32 CAM allows for switch between lens sizes based on use-case.

Our AI-thinker ESP 32 Cam comes stock with an OVA - 2MP sensor capable of shooting in up to 640 * 640 at 30 fps. Since, Our surveillance system requires only adequate photo quality (resolution) to perform the identification of possible intruders, discussed in another section. The OVA camera sensor is deemed sufficient for the smart surveillance system.