

My IoT device

My IoT device is used for security purposes in manufacturing. The IoT device is suited for making sure that a secure area is not breached by a person set by Administration. The device is able to Auto focus onto someones face, and then is able to check the data base if the person is allowed to be in the area. Using Machine learning, and open source projects like Cv2, the IoT device is able to pick up on faces quickly.

1. The Camera is a small but has a high resolution and is able to then send the images captured of the peoples faces when identified, to be ran against the machine learning model.
2. The main silicon processor's main job is not so much the compute the model. The Main job is to pre-process the image into a 2-dimensional array to then send the TPU. Having the on-board silicon also allows for the response to be sent extremely fast to the 10gb internet connection. Which gives an increase in the speed of information, and a faster network if the company wants to have more than one of these cameras.
3. The 10gb wired connection was chosen because of the ability to have more than one of these devices. There is nothing more solid than having a wired connection, and along with that, it will be very hard to intercept the transmission of the images. Allowing for 10gb internet connection also allows for the most up to date livestreaming of the footage being streamed off the device.
4. The power for the system can run off a USB-C cable, which was chosen because of the parts cost. Trying to keep this board as cheap as possible, and along with replacing the power cable being relatively easy.
5. The 10gb storage was to have some sort of storage element on the board. The Chip can quickly reference people who have been added to the list before sending the transmission of the alert or no alert to the main security station.
6. The M.2 NVME TPU unit was chosen to be able to read the images and compare them against the on-card storage of the people on the list super-fast.