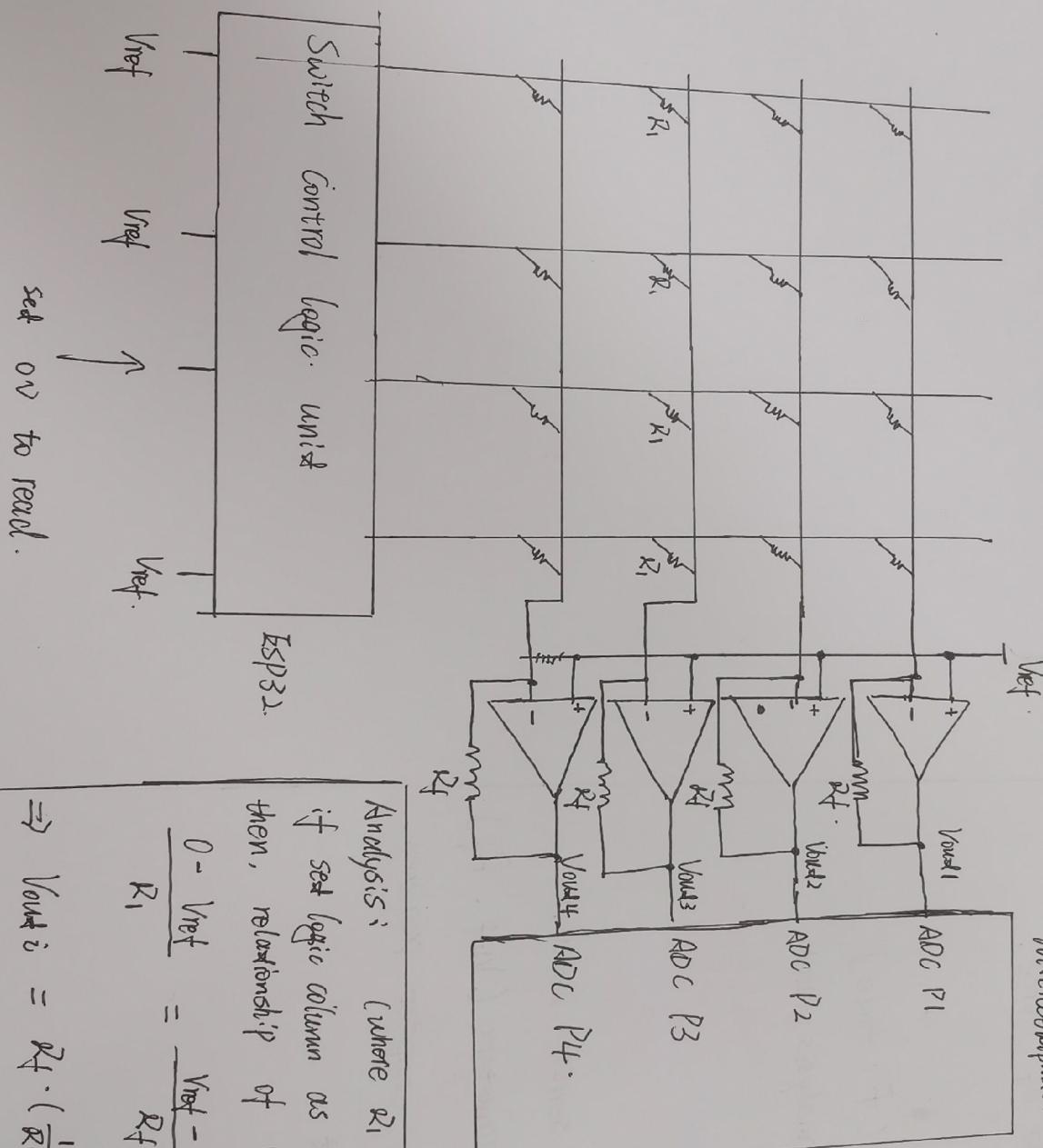


I design so make up a 4×4 arrays

Microcomputer
ESP32.



Analysis: (where R_i is Varistor)

if set logic column as inverting voltage 0 V.
then, relationship of V_{out1} as follow:

$$\frac{0 - V_{ref}}{R_1} = \frac{V_{ref} - V_{out1}}{R_f}.$$

$$\Rightarrow V_{out1} = R_f \cdot \left(\frac{1}{R_1} \cdot V_{ref} + \frac{1}{R_f} V_{ref} \right)$$

$$\Rightarrow V_{out1} \propto \frac{1}{R_1} \cdot \left(1 + \frac{R_f}{R_1} \right) \cdot V_{ref}.$$

Analysis :

Since with the increase of force,
resistance \downarrow

$$\Rightarrow F \propto \frac{1}{R_1} \quad (F : \text{force})$$

According to before analysis that

$$V_{out,i} \propto \frac{1}{R_1}$$

$$\Rightarrow F \propto V_{out,i}$$

Step 1 : make up sensor network .

Step 2 : Calibration parameters (V_{ref} , R_f)

Step 3 : write down computer program.

Step 4 : final test