

1. FACIAL TEMPERATURE EMULATOR

To characterize the system, a validation system was developed as previously explained in section 2.2. For its calibration, the 11x11 cm square was divided into approximately 9 equal parts, and the temperature at each of these points was measured with the DAQ970A[6]. The following images illustrate the process of measuring the different temperatures:

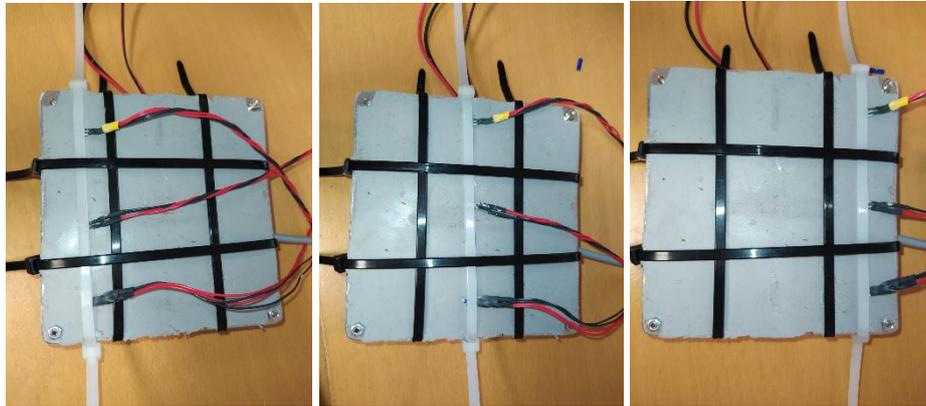


Figura S1. Detail of the position of the measuring probes.

At this point it should be specified that the different measurements taken are shown in the form of a 3x3 table where each point corresponds to one of the sectors of the validation system. The measurements obtained are as follows:

Table S1: Measurements taken at room temperature (24.5 °C)

24.31	24.37	24.32
24.5	24.51	24.49
24.65	24.62	24.66

Table S2: Measurements taken with temperature set at 36.5 °C

35.88	36.01	35.93
37.35	38.23	37.33
35.87	35.98	35.9

Table S3: Measurements taken with temperature set at 37°C

36.63	36.74	36.61
37.74	38.51	37.7
36.64	36.72	36.69

Table S4: Measurements taken with temperature set at 37.5 °C

37.18	37.35	37.27
38.56	39.41	38.52
37.23	37.48	37.34

Table S5: Measurements taken with temperature set at 38 °C

37.97	38.06	37.94
39.21	39.87	39.08
38.08	38.21	38.09

Table S6: Measurements taken with temperature set at 38.5°C

38.36	38.53	38.42
39.43	40.42	39.54
38.34	38.57	38.38

2. Neural networks

Next, we can see the parameters with which the neural network has been designed and the model obtained:

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Input shape: (129, 124, 1)
Model: "sequential"
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Layer (type)                Output Shape                Param #
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resizing (Resizing)         (None, 32, 32, 1)          0
normalization (Normalizati  (None, 32, 32, 1)          3
n)
conv2d (Conv2D)             (None, 30, 30, 32)         320
conv2d_1 (Conv2D)           (None, 28, 28, 64)         18496
max_pooling2d (MaxPooling2D (None, 14, 14, 64)         0
)
dropout (Dropout)           (None, 14, 14, 64)         0
flatten (Flatten)           (None, 12544)               0
dense (Dense)                (None, 128)                 1605760
dropout_1 (Dropout)         (None, 128)                 0
dense_1 (Dense)              (None, 2)                   258
=====
Total params: 1,624,837
Trainable params: 1,624,834
Non-trainable params: 3
  
```

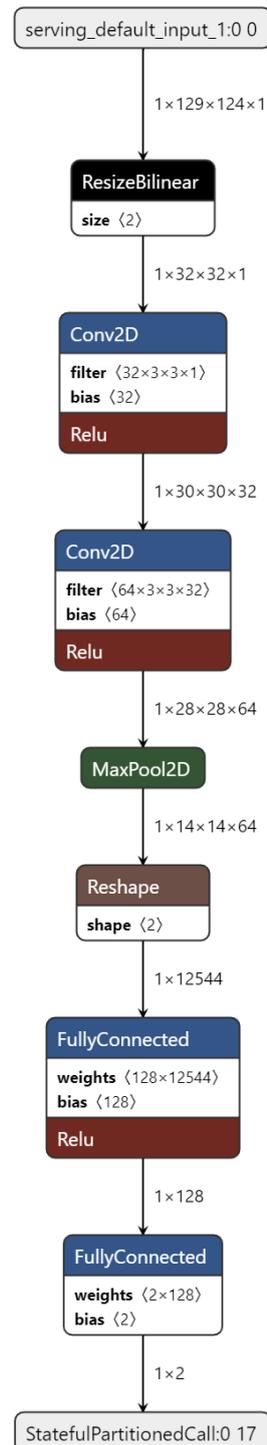


Figure S2. Selected model (left) and diagram of the neural network (right).