

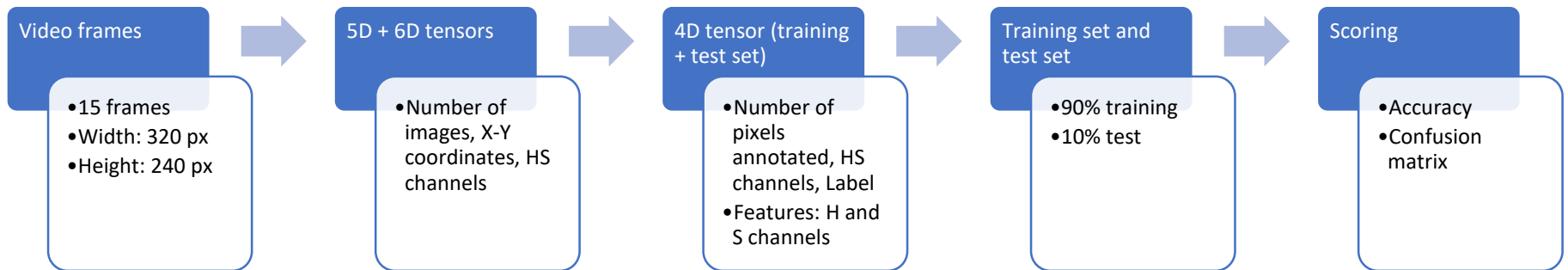
Segmentation – Robótica y percepción computacional

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Dataset generation



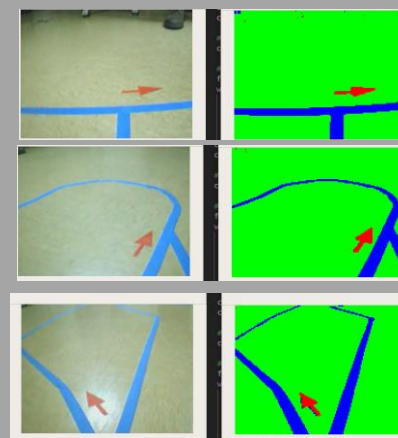
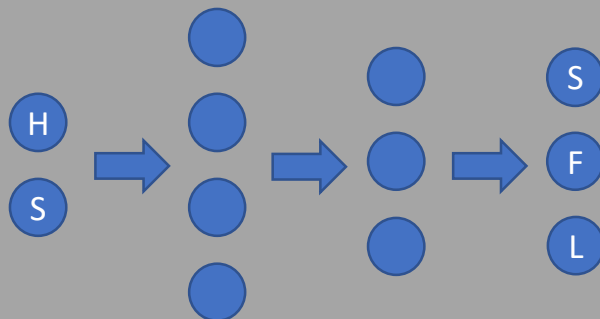
Classifiers

Classifier	Result
Distance-based classifier (Euclidean distance)	Bad results, poor learning
Gaussian Naïve-Bayes	Bad results, poor learning
2-layer MLP (8,8)	Overfit
2-layer MLP (4,3), ReLU activation	Very poor learning (underfit)
2-layer MLP (4,3), identity activation	Very poor learning (underfit)
2-layer MLP (4,3), sigmoid activation, regularization	Best until now

Accuracy: 0.99

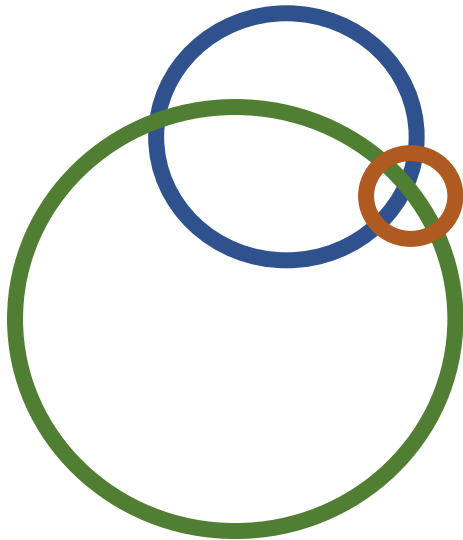
Confusion matrix:

```
[[ 2069  15   0]
 [   8 27005  1]
 [    2    5 220]]
```



Problems

Symbol data is difficult to obtain



Segmentation is still poor.

Factors still to enhance:

- Dropout
- Other activations
- More data of symbols (red)
- Parallelization of the classifier