



Tecnológico
de Monterrey

Implementación de un modelo de deep learning

IA.

Raymundo Ivan Diaz Alejandre A01735644

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Inteligencia artificial avanzada para la ciencia de datos II

Introducción.

Metodología.

Extracción de esqueletos.

Entrenamiento.

Resultados.

Conclusiones.

```
● raymundodiaz@192 skeleton_acts % python3 -m src.train --config configs/default.yaml --model baseline
[Ep 001] train: loss=1.5643 acc=0.315 f1=0.210 | val: loss=1.4310 acc=0.567 f1=0.476
    -> saved best to runs/baseline/best.pt (f1=0.476)
[Ep 002] train: loss=1.3870 acc=0.493 f1=0.415 | val: loss=1.2008 acc=0.591 f1=0.527
    -> saved best to runs/baseline/best.pt (f1=0.527)
[Ep 003] train: loss=1.1247 acc=0.547 f1=0.451 | val: loss=1.0235 acc=0.591 f1=0.523
[Ep 004] train: loss=0.9147 acc=0.634 f1=0.561 | val: loss=0.8811 acc=0.638 f1=0.573
    -> saved best to runs/baseline/best.pt (f1=0.573)
[Ep 005] train: loss=0.7605 acc=0.662 f1=0.612 | val: loss=1.0690 acc=0.567 f1=0.492
[Ep 006] train: loss=0.9666 acc=0.607 f1=0.561 | val: loss=0.9085 acc=0.591 f1=0.580
    -> saved best to runs/baseline/best.pt (f1=0.580)
[Ep 007] train: loss=0.9780 acc=0.542 f1=0.491 | val: loss=0.8990 acc=0.606 f1=0.581
    -> saved best to runs/baseline/best.pt (f1=0.581)
[Ep 008] train: loss=0.8290 acc=0.673 f1=0.657 | val: loss=0.8210 acc=0.654 f1=0.598
    -> saved best to runs/baseline/best.pt (f1=0.598)
[Ep 009] train: loss=0.7533 acc=0.636 f1=0.574 | val: loss=0.8366 acc=0.661 f1=0.621
    -> saved best to runs/baseline/best.pt (f1=0.621)
[Ep 010] train: loss=0.7621 acc=0.638 f1=0.578 | val: loss=0.8543 acc=0.685 f1=0.671
    -> saved best to runs/baseline/best.pt (f1=0.671)
[Ep 011] train: loss=0.7920 acc=0.694 f1=0.674 | val: loss=0.7884 acc=0.693 f1=0.672
    -> saved best to runs/baseline/best.pt (f1=0.672)
[Ep 012] train: loss=0.7741 acc=0.704 f1=0.674 | val: loss=0.7743 acc=0.685 f1=0.671
[Ep 013] train: loss=0.6417 acc=0.756 f1=0.757 | val: loss=0.7813 acc=0.646 f1=0.638
[Ep 014] train: loss=0.6785 acc=0.741 f1=0.739 | val: loss=0.6886 acc=0.772 f1=0.766
    -> saved best to runs/baseline/best.pt (f1=0.766)
[Ep 015] train: loss=0.5759 acc=0.772 f1=0.755 | val: loss=0.7824 acc=0.677 f1=0.646
○ raymundodiaz@192 skeleton_acts %
```

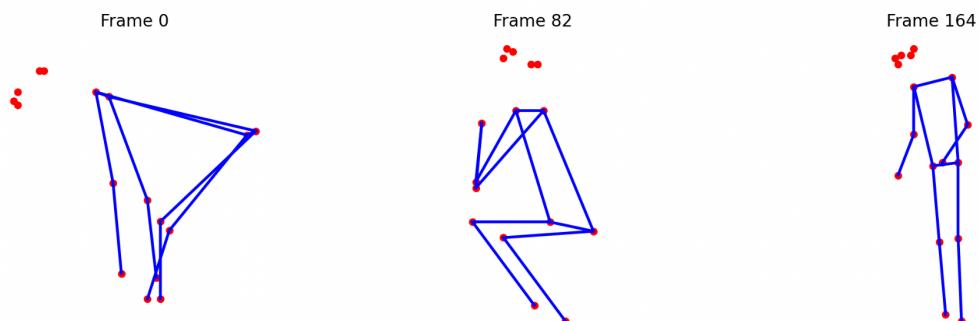
Ln 140, Col 1 Spaces: 4 UTF-8 LF {} Python ⚙ Finish Setup Python 3.13.2 (homebrew) ⌂

Confusion Matrix (F1=0.766, Acc=0.772)

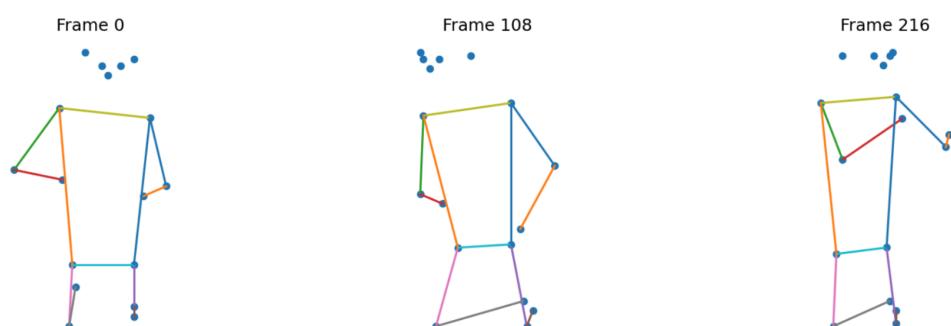
	0	1	2	3	4
0	20	6	2	0	1
1	1	18	0	1	2
2	0	0	26	2	1
3	0	0	3	22	1
4	0	0	9	0	12
	0	1	2	3	4

Ejemplos random de 3 frames de un esqueleto del dataset.

Skeleton Visualization
20_v_CleanAndJerk_g12_c01.pkl



Skeleton visualization for sample: 100_v_YoYo_g23_c05.pkl



Skeleton Visualization
76_v_SalsaSpin_g09_c02.pkl

