

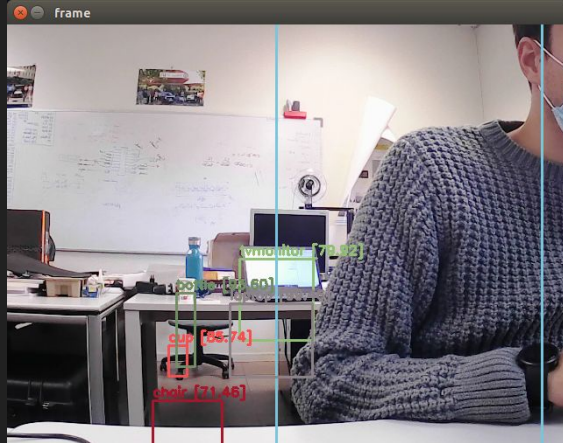
# Follow Person IV

Pedro Arias

# Comparación

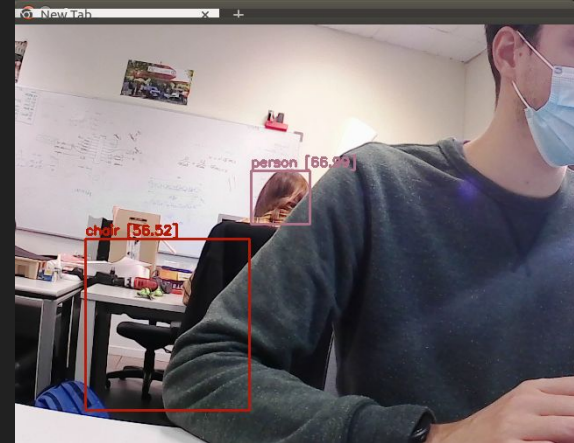
- YOLOv4

- ~ 5 FPS
- Latencia ~1s
- Mayor nº de objetos detectados
- Mayor confianza



- YOLOv4 Tiny

- ~30 FPS
- Tiempo real
- Pocos objetos detectados
- Menor confianza



# Plan de Prueba de Vuelo

- Establecimiento de conexión y muestra de parámetros ✓
- Armado ✓
- Despegue ( $h=1$ ) y Aterrizaje
- Despegue ( $h=1$ ), Movimiento de guiñada en ambos sentidos y Aterrizaje
- Follow person con control por guiñada

Problemas en armado/desarmado

Interferencias en red WiFi  
Baja intensidad

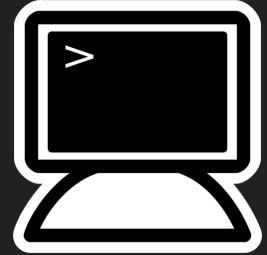


Cortes en la conexión

Cable de alimentación de la jetson

# Arq. de las Comunicaciones

## 1. PC como AP



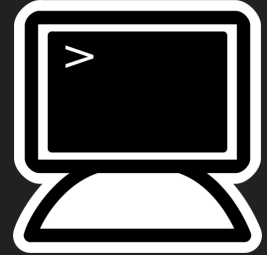
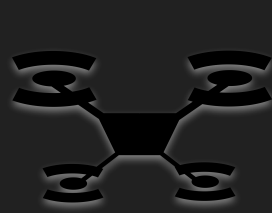
`ROS_IP=10.42.0.1`

`ROS_IP=10.42.0.180`

`ROS_MASTER_URI=  
http://10.42.0.1:11311/`

# Arq. de las Comunicaciones

1. PC como AP
2. Drone como AP



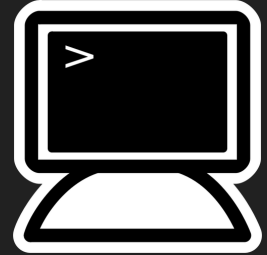
`ROS_IP=10.42.0.1`

`ROS_IP=10.42.0.180`

`ROS_MASTER_URI=  
http://10.42.0.1:11311/`

# Arq. de las Comunicaciones

1. PC como AP
2. Drone como AP
  - Antena WiFi



ROS\_IP=10.42.0.1

ROS\_IP=10.42.0.180

ROS\_MASTER\_URI=  
<http://10.42.0.1:11311/>

# LOCAL

- CPU
  - YOLOv4: 0.4 FPS
  - YOLOv4-Tiny: ~8 FPS

- GPU ❌

OpenCV compiled CUDA: **NO**

nvidia drivers -- v470.57.02  
CUDA -- v11.4  
nvcc -- v9.1  
cuDNN -- v8.2.2  
OpenCV -- v4.2.0  
cmake -- v3.21.3

```
parias@stick: ~  
Archivo Editor Ver Buscar Terminal Ayuda  
parias@stick:~$ nvidia-smi  
Tue Sep 28 17:35:09 2021
```

NVIDIA-SMI 470.57.02 Driver Version: 470.57.02 CUDA Version: 11.4									
GPU	Name	Persistence-M	Bus-Id	Disp.A	Volatile	Uncorr.	ECC		
Fan	Temp	Perf	Pwr:Usage/Cap	Memory-Usage	GPU-Util	Compute M.	MIG M.		
0	NVIDIA GeForce ...	On	00000000:01:00.0	Off			N/A		
N/A	53C	P3	N/A / N/A	787MiB / 4042MiB	6%	Default	N/A		

```
Processes:  
GPU  CI  CI  PID  Type  Process name  GPU Memory  
ID   ID  ID                   Usage  
0    N/A  N/A  1272  G     /usr/lib/xorg/Xorg  47MiB  
0    N/A  N/A  1459  G     /usr/bin/gnome-shell  88MiB  
0    N/A  N/A  1686  G     /usr/lib/xorg/Xorg  242MiB  
0    N/A  N/A  1860  G     /usr/bin/gnome-shell  54MiB  
0    N/A  N/A  3086  G     /usr/lib/firefox/firefox  343MiB  
0    N/A  N/A  3357  G     /usr/lib/firefox/firefox  1MiB  
0    N/A  N/A  3392  G     /usr/lib/firefox/firefox  1MiB  
0    N/A  N/A  4581  G     /usr/lib/firefox/firefox  1MiB  
0    N/A  N/A  6083  G     /usr/lib/firefox/firefox  1MiB  
0    N/A  N/A  6717  G     /usr/lib/firefox/firefox  1MiB
```

```
parias@stick:~$ nvcc --version  
nvcc: NVIDIA (R) Cuda compiler driver  
Copyright (c) 2005-2017 NVIDIA Corporation  
Built on Fri Nov 3 21:07:56 CDT 2017  
Cuda compilation tools, release 9.1, V9.1.85  
parias@stick:~$
```

# LOCAL

- CPU
  - YOLOv4: 0.4 FPS
  - YOLOv4-Tiny: ~8 FPS
- GPU ❌
  - Desinstalar OpenCV (y ROS)
  - Compilar OpenCV desde fuente con CUDA
  - Errores al compilar

OpenCV compiled CUDA: **NO**

nvidia drivers -- v470.57.02  
CUDA -- v11.4  
nvcc -- v9.1  
cuDNN -- v8.2.2  
OpenCV -- v4.2.0  
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Archivo Editar Ver Buscar Terminal Ayuda  
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Tue Sep 28 17:35:09 2021  
+-----+  
| NVIDIA-SMI 470.57.02   Driver Version: 470.57.02   CUDA Version: 11.4   |  
+-----+-----+  
| GPU  Name                Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |  
| Fan  Temp  Perf  Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |  
+-----+-----+  
| 0  NVIDIA GeForce ...  On          | 00000000:01:00:00 Off |         6%      Default |  
| N/A   53C    P3      N/A /   N/A | 787MiB / 4042MiB |             N/A      |  
+-----+-----+  
+-----+  
| Processes: |  
| GPU   GI    CI          PID    Type   Process name                  GPU Memory |  
| ID   ID   ID           |                  | Usage |  
+-----+  
| 0  N/A  N/A         1272     G   /usr/lib/xorg/Xorg             47MiB |  
| 0  N/A  N/A         1459     G   /usr/bin/gnome-shell          88MiB |  
| 0  N/A  N/A         1686     G   /usr/lib/xorg/Xorg            242MiB |  
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| 0  N/A  N/A         6083     G   /usr/lib/firefox/firefox        1MiB |  
| 0  N/A  N/A         6717     G   /usr/lib/firefox/firefox        1MiB |  
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