

6G Simultaneous Sensing and Communication

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Who am I

- Florian QUINT



Goal of the project

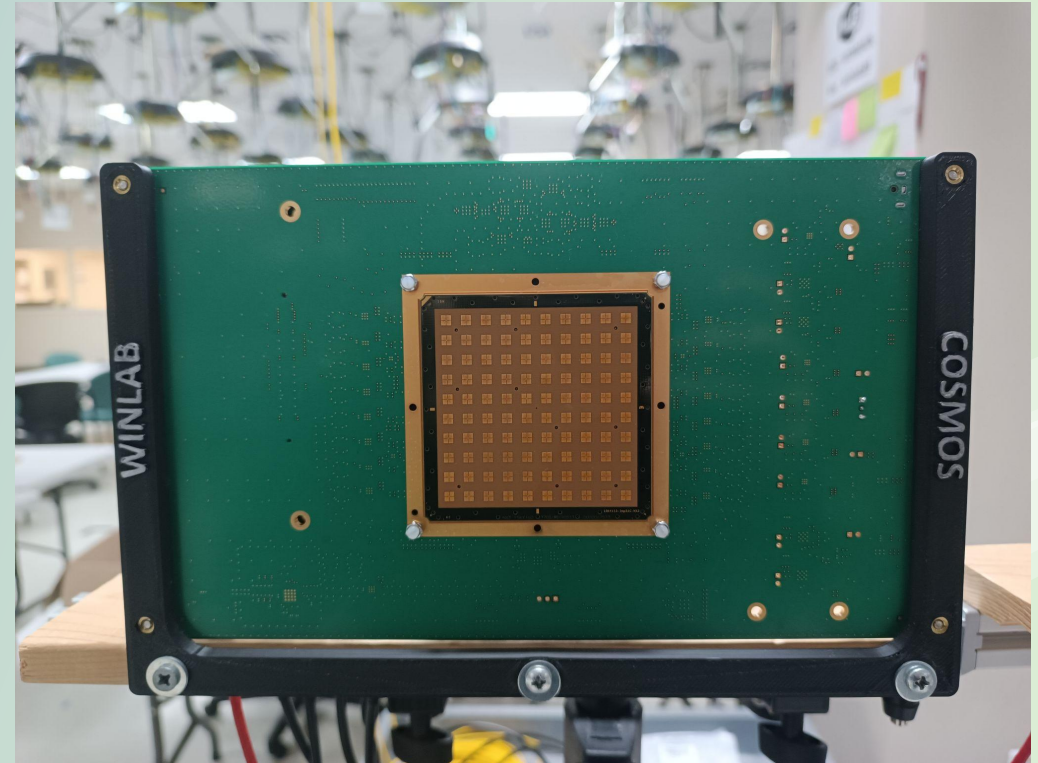
- Sensing: get data input and extract feature from the data
- Communication: show the the data after data processing
- Simultaneous: do sensing and communication at the same time

The hardware

ZED 2i camera



IBM 28GHz phased array antenna

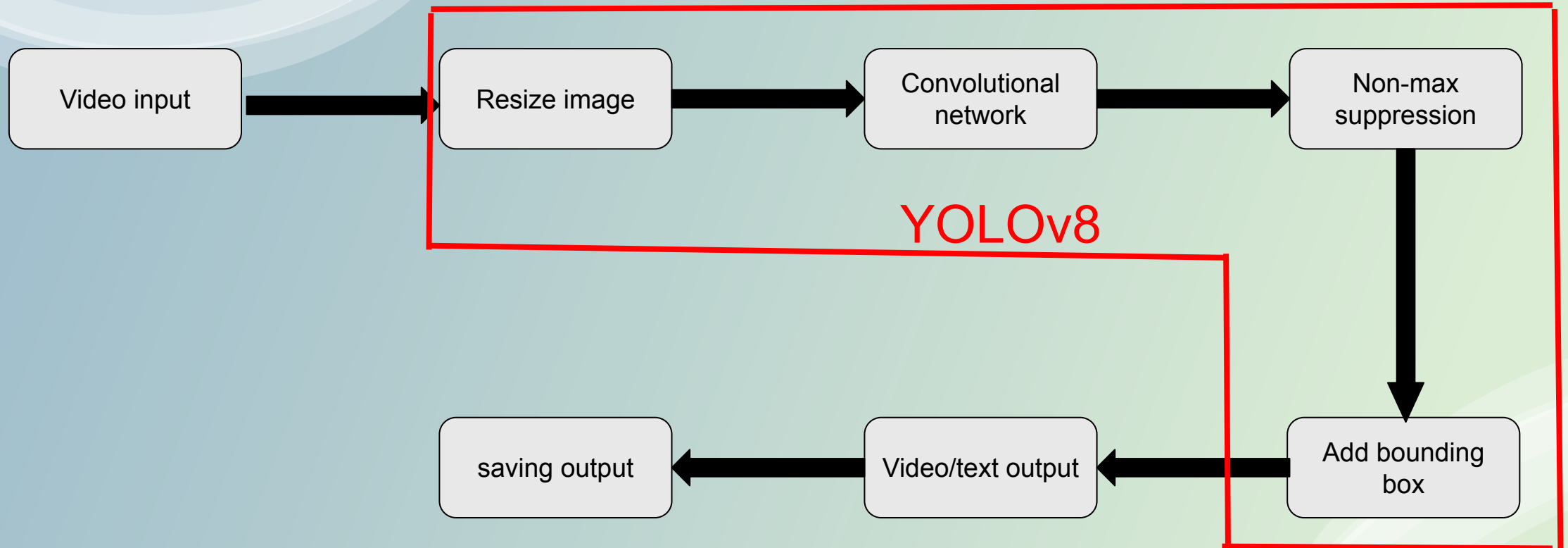


Yolo presentation

- created in 2015
- Convolutional network (neural network)
- State of the art result
- go for algorithm
- object detection
- boxes around detection

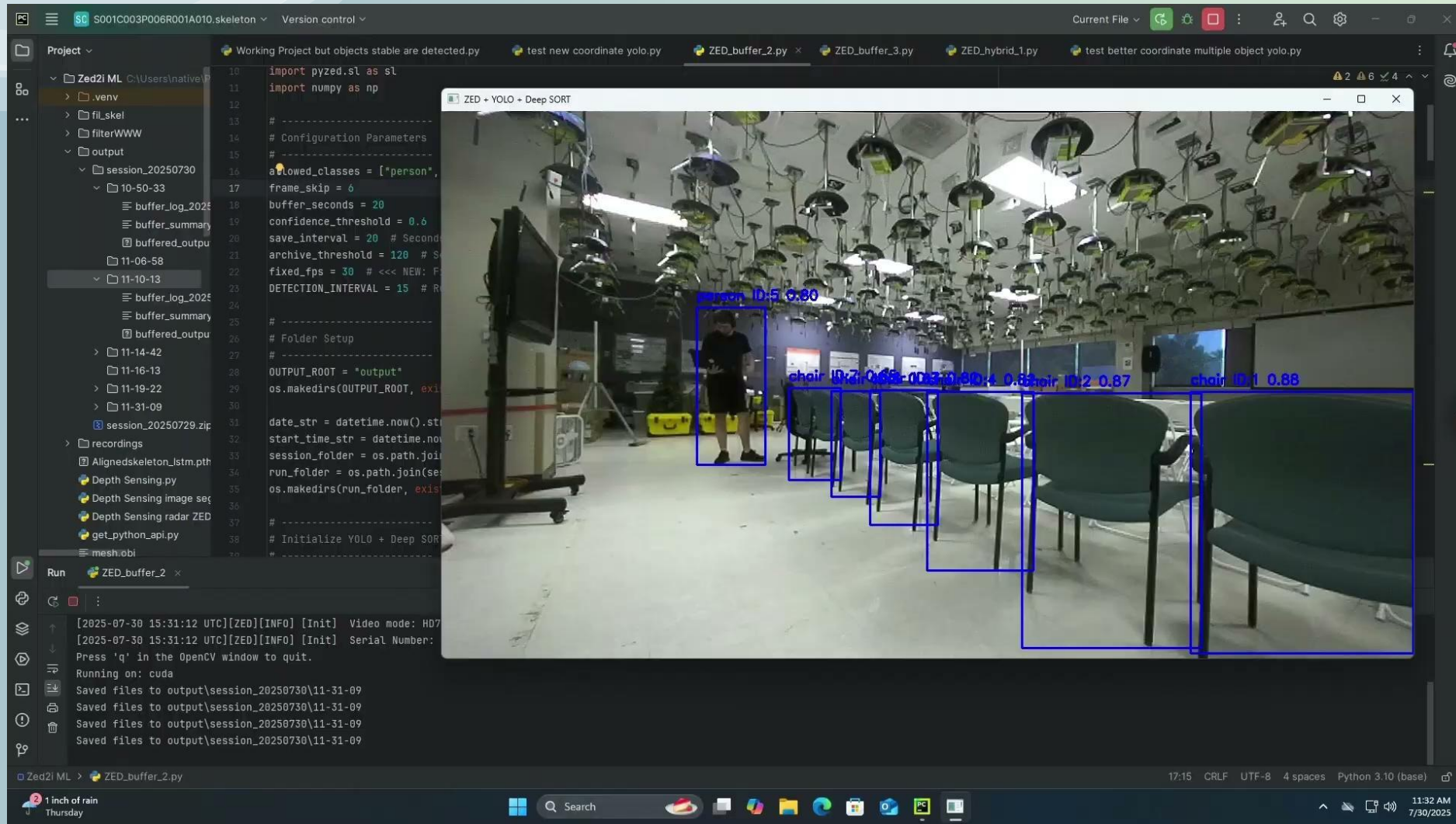
How it works

- For the camera



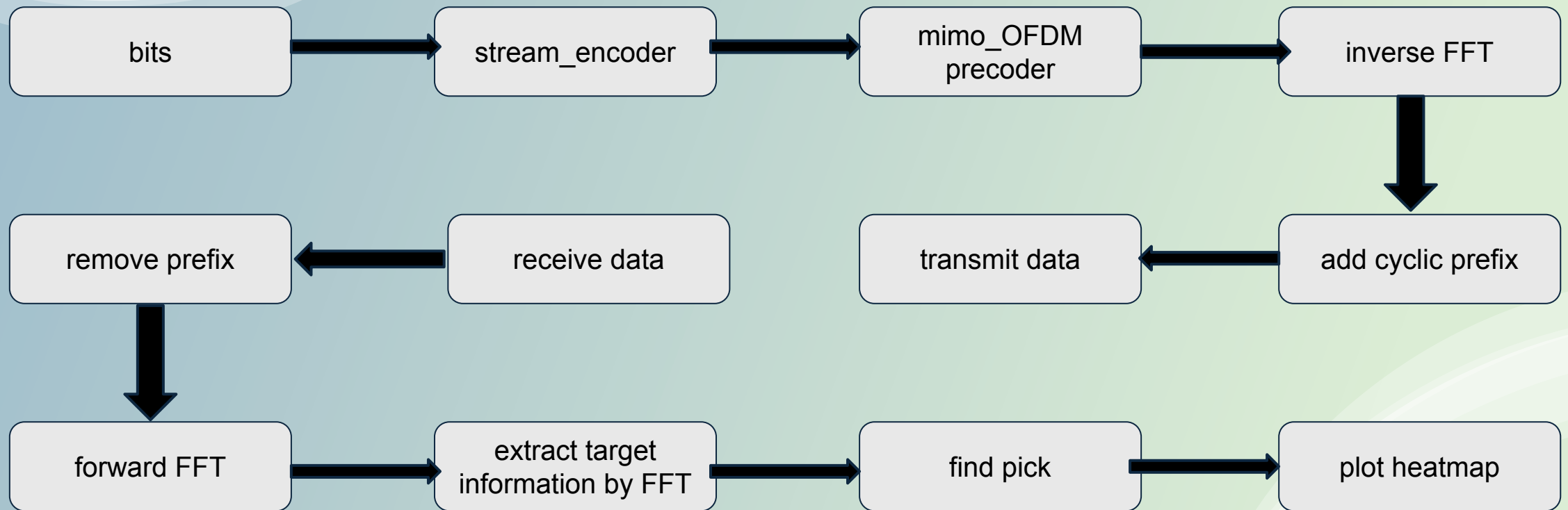
How we do it

- Python programme for the camera



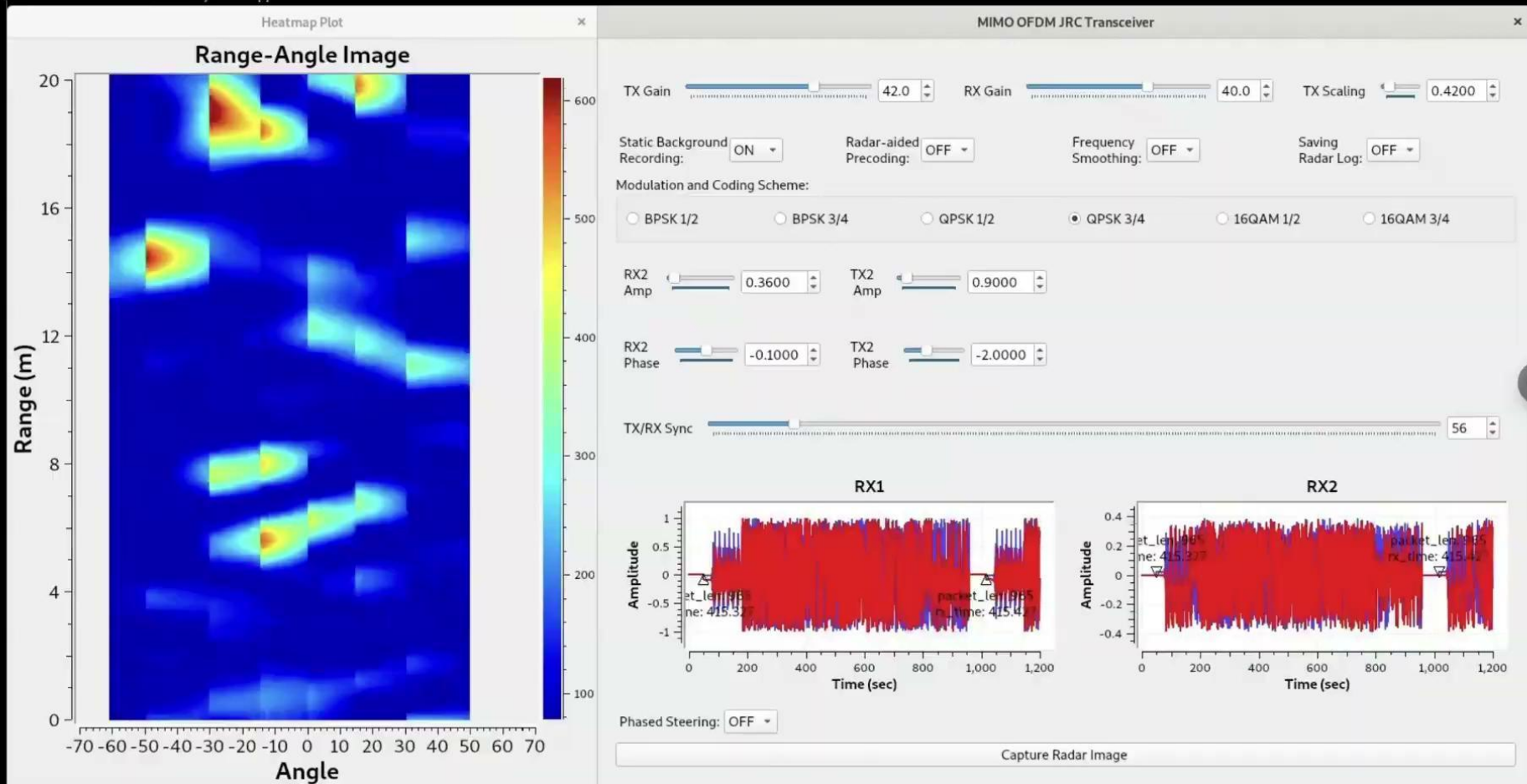
How it works

- For the radar with gr-mimo

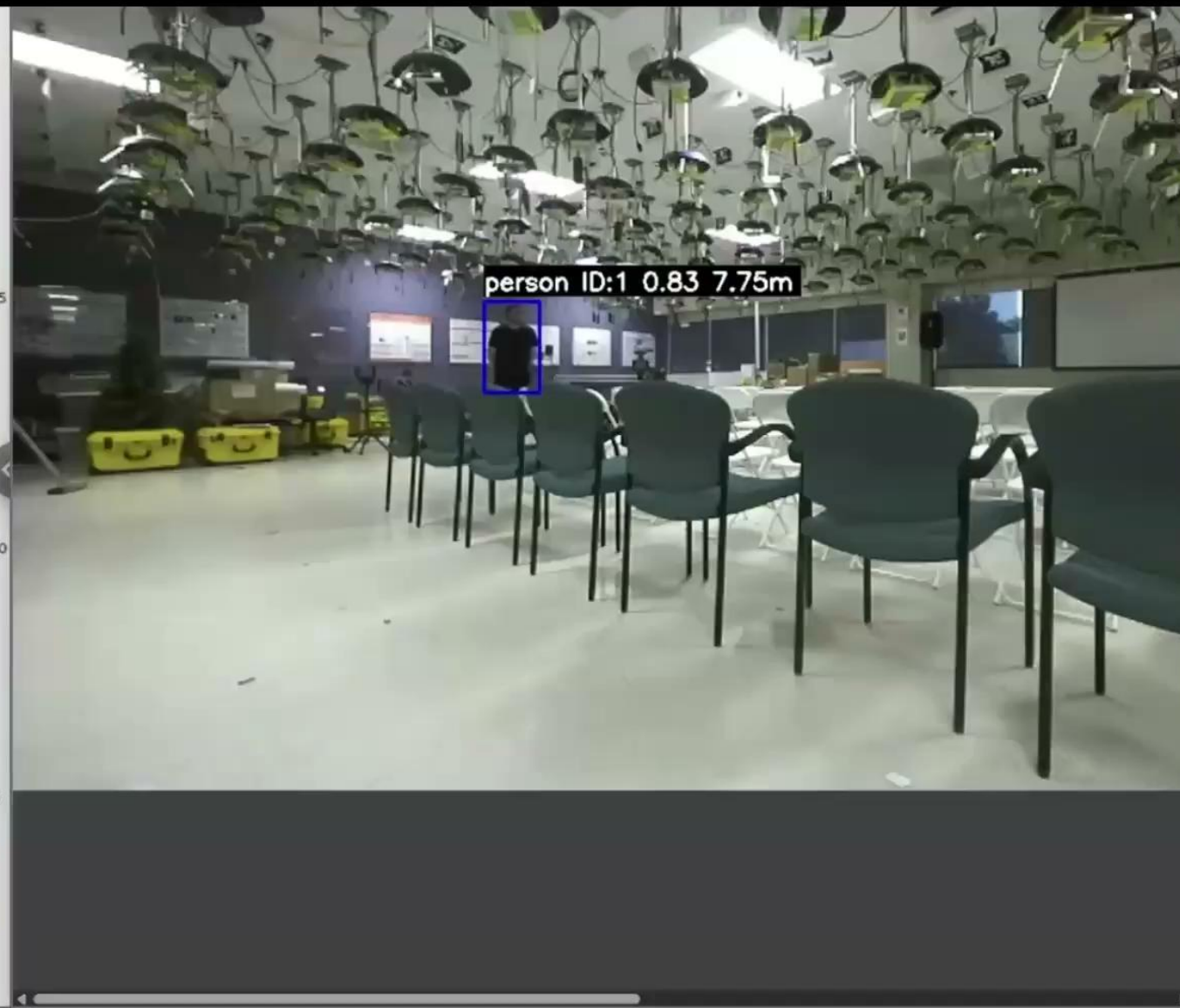
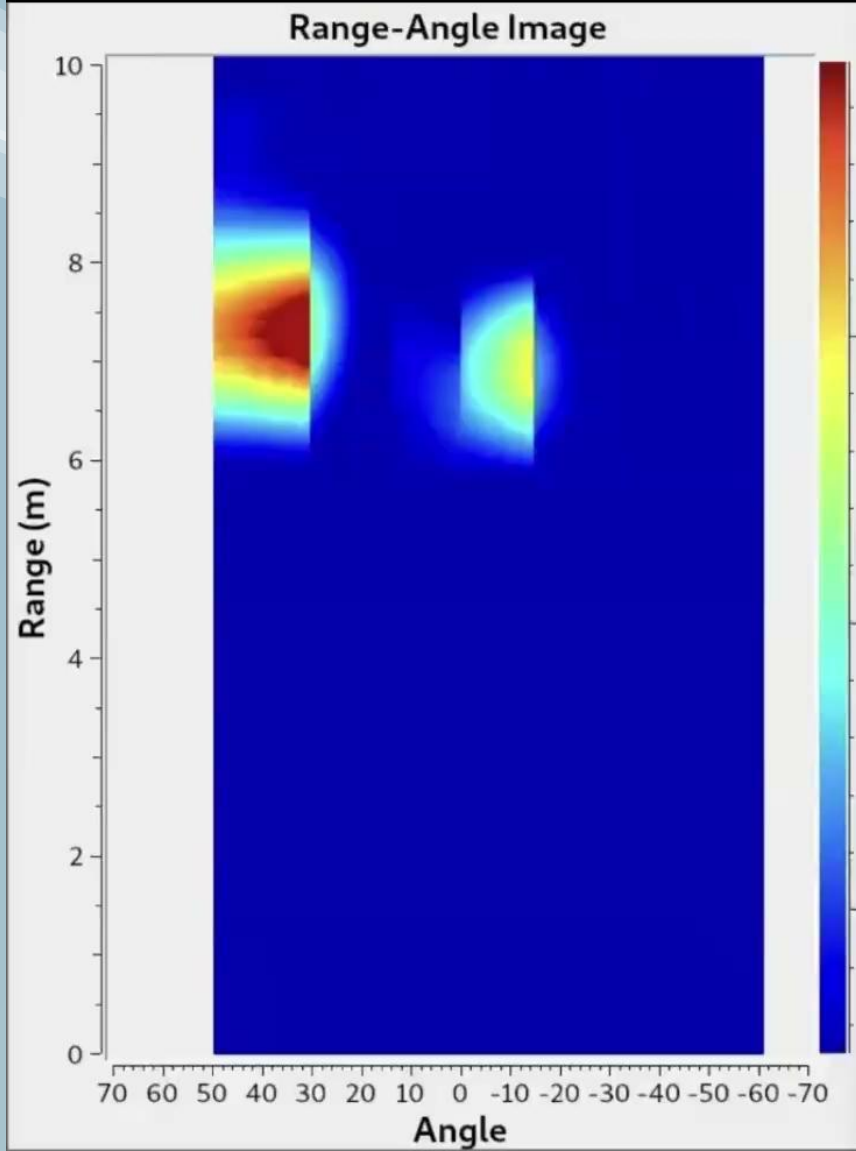


How we do it

- GNU radio for the radar



Combination of both



What can be the use of this project

- Object and person detection in a city
- Object and person detection from a car

Future possible improvement

- Get faster and better programs for the camera and radar
- Implement it in a new environment
- Get a real fusion of both radar and camera



Thank you for your
attention