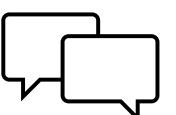Human
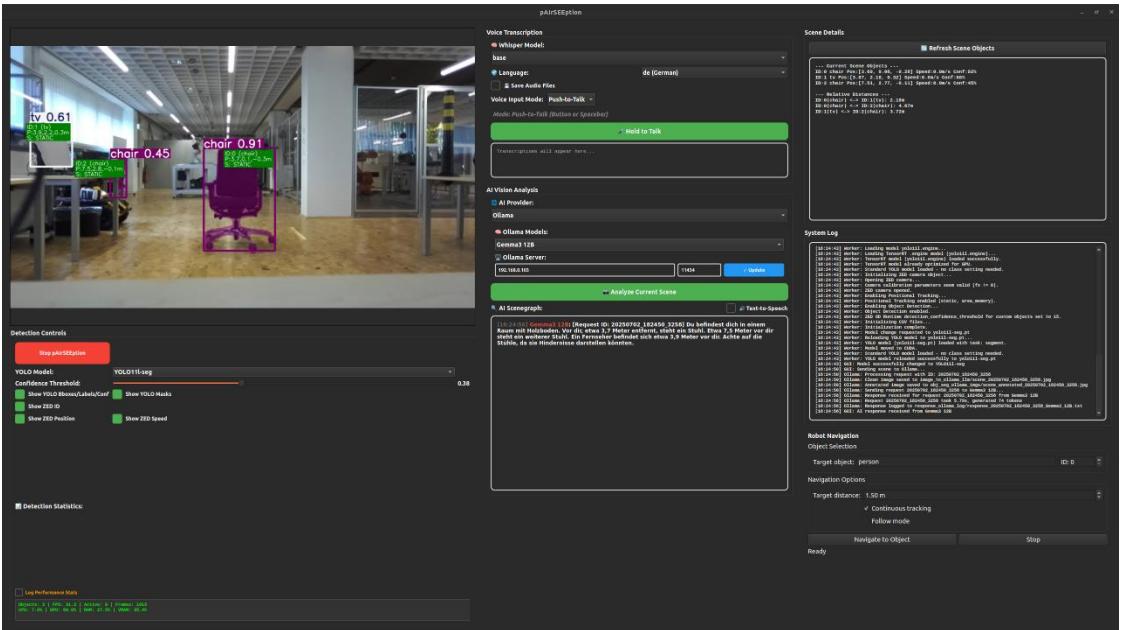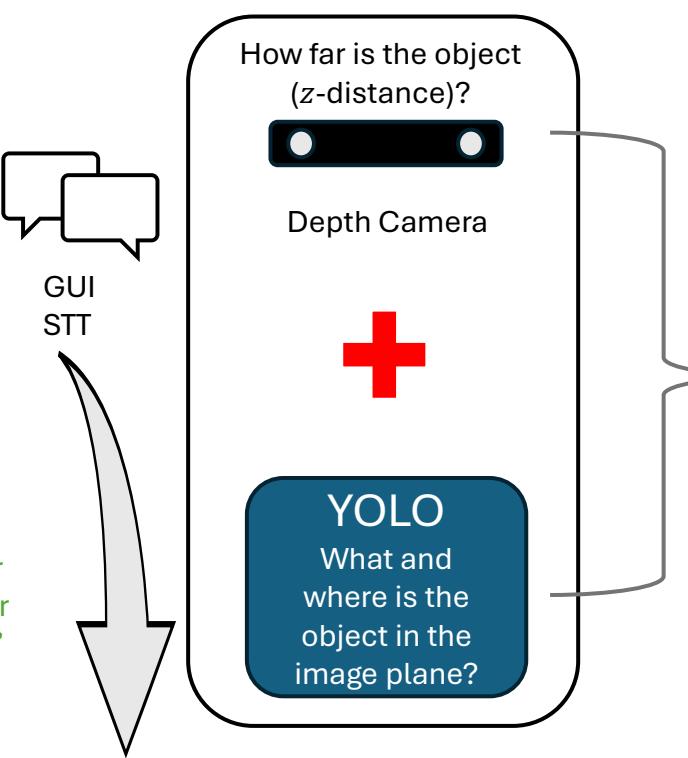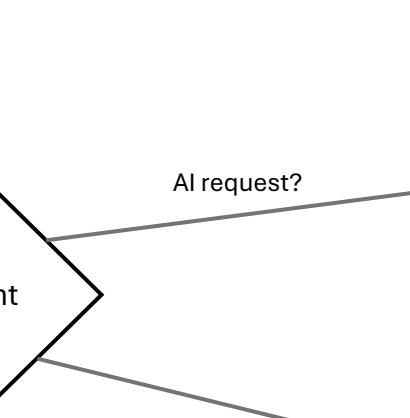
Possible user input:

a. "Analyze the scene!"

b. "Drive to object ABC!"

c. "What is your current motor temperature"

d. "Can you explain how to use your system?"

GUI STT

Object detection and localization

How far is the object (z-distance)?

Depth Camera

YOLO
What and where is the object in the image plane?

Intent analyzer

Intent

AI request?

Direct navigation command
or
system status query?

Hybrid voice assistant (TTS)

LLM/VLM answer

a. "There is a car in front of you, 5 meters away."

d. "Sure, you can give me voice commands to analyze the scene for a blind person, for example, or you can tell me a navigation destination in my field of vision that I should drive to, or I can follow any recognized object by YOLO!"

Rule-based answer and action

b. "I will drive to object ABC…. Destination reached!"
c. "My left motor temperature is 25 °C and my right motor temperature is 26 °C."

Write and subscribe to ROS2 topics to drive or query status

:::ROS 2

z
y
Yaw
Pitch
Roll
x