







Pose Estimation (1)

Given the initial pose at t=0s:
{"Tx": 0.0 , "Ty": 0.0 , "Tz": 0.0 ,
 "r11": 1.0 , "r12": 0.0 , "r13": 0.0 ,
 "r21": 0.0 , "r22": 1.0 , "r23": 0.0 ,
 "r31": 0.0 , "r32": 0.0 , "r33": 1.0}
, what is the camera pose at t=23s?

Answer:

{"Tx": 0.02 , "Ty": 0.61 , "Tz": -0.34 , "r11": -0.96, "r12": 0.22 , "r13": -0.15, "r21": -0.26, "r22": -0.72, "r23": 0.64 , "r31": 0.03 , "r32": 0.65 , "r33": 0.76}}

Speed & Acceleration ①

What is the average speed of the camera between 4s and 13s?

A:0.13m/s B:0.39m/s C:0.29m/s D:0.41m/s $\underline{E:0.16m/s}$

Spatial Relation ①

What is the positional relationship of the red suitcase relative to the teddy bear? (t=0s)

C:Front

A:Left B:Right D:Back E:Up

3D Video Grounding ②

Given a single frame, identify the 3D bounding box localization for a small beige handbag with gold zippers. Consider dimensions, central point, and orientation in yaw, pitch, and roll. (t=30s)

Prompt: A small beige handbag with gold zippers.

Answer:

{"dimensions": [19.401, 20.67, 19.4],
 "central_point": 33.99, 17.09, 115.45],
 "orientation":
{"yaw": 56.83, "pitch": 37.74, "roll": 112.36}}

Dimensional Measurement 2

What is the distance between the camera and the silver laptop with a black keyboard at the given frame? (t=0s)

Prompt: A silver laptop with a black keyboard.

<u>A:104.97m</u> B:110.22m C:106.28m D:103.66m E:107.59m

Displacement & Path Length 2

What is the camera's displacement between 15s and 24s?

<u>A:0.45m</u> B:0.23m C:0.37m D:0.68m E:0.31m