



### LLM-based Task Planner

#### Prompts:

Your task is to decompose the input instruction into subtasks and number them as Task  $i$  with specific format... When the robot returns 'succuss', send the next Task...

#### LLM Response:

**Task 1:** Run to the chair at 0.4m/s  
**Task 2:** Move to the chair at 0.5m/s  
**Task 3:** Approach to the person at 0.8m/s

Interact  
...

#### User:

Success

#### LLM Response:

Task Success

### Language-to-Motion Model

Instruction

"Move to the chair at 0.5m/s"

Yolo Result

$[O_p, C_p, O_{xy}, O_{wh}]$

Search & Mission State

$[S_{search}, S_{mission}]$

Transformer

[SEP] [SEP] [SEP]

$D_{search}$

← →

$[0, 1]$

$D_{motion}$

$V_x, V_y, \vartheta$

$[0.5, 0.0, 0.3]$

$D_{mission}$

✓

$[0, 0, 0, 1]$