



# 190c-9e-Picture-Captioning-v1-hl- 2024-5-22.odp

## (Under Construction)

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CTI One Corporation is located in the Silicon Valley, California. We design, develop and manufacture AI enabled smart rollators/walkers and exoskeleton devices for senior living operators, physically challenged as well as aging population for a better independent living. We design Artificial Intelligence, Computer Vision, and Robotics to modernize next generation autonomous mobility devices. Our smart rollators/walkers are battery powered, can be driven with a remote controller, and can respond and recognize the user and drive up to the user.

CTI One Corporation  
This document is created by:

Harry Li, Ph.D.  
Yusuke Yakuwa

May 22, 2024

[https://www.freepik.com/search?  
format=search&query=remote%20controller](https://www.freepik.com/search?format=search&query=remote%20controller)

# ChatGPT 4.0 for Picture Captioning (5/23, 2024)

1. Attach image to ChatGPT 4.0



2. At the prompt, type in "picture captioning"

3. Retrieve the ChatGPT response

4. Parse the response, calculate/generate motion path.

5. Actuate the control system to make motion to follow the calculated motion path

This image depicts an exhibition booth showcasing an AI-enabled walker. The banner reads "Artificial Intelligence" with a subheading "CTI One Corporation, Santa Clara." The booth has signage that highlights the walker's features, including its ability to recognize the user, respond to their phone, and walk towards them. There are several individuals in the image, including one person demonstrating or explaining the walker to others. The exhibition setting is evident with other booths and attendees visible in the background. The overall atmosphere suggests a tech or medical equipment expo.

# Case I Open Ended Inquiry for Finding Pathway in the Shop (5/23, 2024)

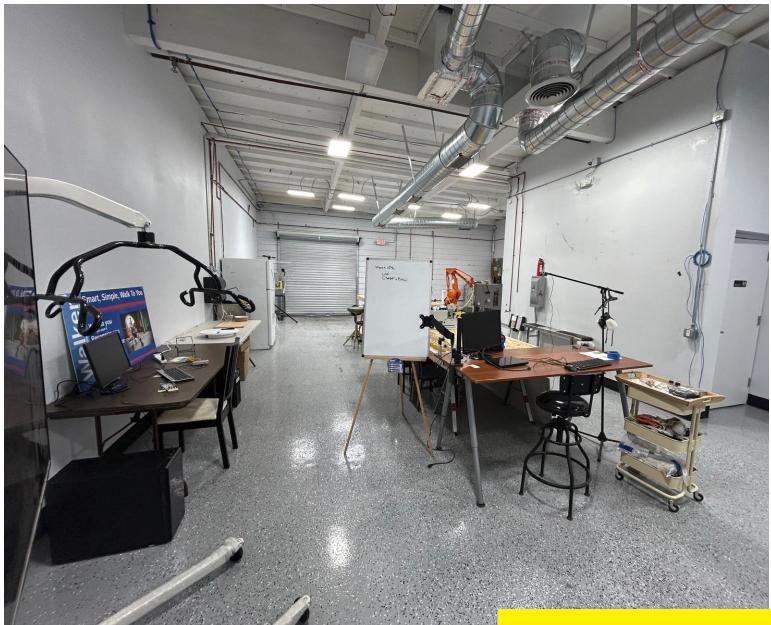
1. Attach image to ChatGPT  
4.0



2. At the prompt, type in "find pathway" (open ended inquiry)



3. The ChatGPT response



Proximity sensing

Yolo or Yolack

To find a pathway in the workshop, follow these steps based on the layout shown in the image:

1. **Starting Point:** Begin at the bottom of the image near the workbench with the computer monitor and desk lamp.
2. **Proceed Forward:** Move straight down the main corridor of the workshop, staying close to the right wall to avoid obstacles on the left.
3. **Pass the Central Work Area:** Continue past the central work area where desks and equipment are placed. Ensure to walk in the clear space between the desks and the right wall.
4. **Reach the Far End:** The pathway leads straight to the far end of the workshop, where you can see the large roll-up door.
5. **Avoid Obstacles:** Be mindful of any small carts or equipment that may be on the right side as you proceed forward.

This pathway ensures you navigate through the workspace efficiently, avoiding any potential obstacles while moving towards the large roll-up door at the back.

# Python To Capture the Semantics for Finding the Pathway (5/23, 2024)

find pathway

ChatGPT

To find a pathway in the workshop, follow these steps based on the layout shown in the image:



Starting Point: Begin at the bottom of the image near the workbench with the computer monitor and desk lamp.

Proceed Forward: Move straight down the main corridor of the workshop, staying close to the right wall to avoid obstacles on the left.

Pass the Central Work Area: Continue past the central work area where desks and equipment are placed. Ensure to walk in the clear space between the desks and the right wall.

Reach the Far End: The pathway leads straight to the far end of the workshop, where you can see the large roll-up door.

Avoid Obstacles: Be mindful of any small carts or equipment that may be on the right side as you proceed forward.

This pathway ensures you navigate through the workspace efficiently, avoiding any potential obstacles while moving towards the large roll-up door at the back.

Yolo or Yolact

To find a pathway in the workshop, follow these steps based on the layout shown in the image:

1. **Starting Point:** Begin at the bottom of the image near the workbench with the computer monitor and desk lamp.
2. **Proceed Forward:** Move straight down the main corridor of the workshop, staying close to the right wall to avoid obstacles on the left.
3. **Pass the Central Work Area:** Continue past the central work area where desks and equipment are placed. Ensure to walk in the clear space between the desks and the right wall.
4. **Reach the Far End:** The pathway leads straight to the far end of the workshop, where you can see the large roll-up door.
5. **Avoid Obstacles:** Be mindful of any small carts or equipment that may be on the right side as you proceed forward.

This pathway ensures you navigate through the workspace efficiently, avoiding any potential obstacles while moving towards the large roll-up door at the back.

# Capture Object Labels for Annotation for Deep Learning Training (5/23, 2024)

find pathway

ChatGPT

To find a pathway in the workshop, follow these steps based on the layout shown in the image:

Starting Point: Begin at the bottom of the image near the workbench with the computer monitor and desk lamp.



Output:

[workbench, computer monitor, desk lamp, corridor, wall, desk, ... roll-up door]

Proceed Forward: Move straight down the main corridor of the workshop, staying close to the right wall to avoid obstacles on the left.

Pass the Central Work Area: Continue past the central work area where desks and equipment are placed. Ensure to walk in the clear space between the desks and the right wall.

Reach the Far End: The pathway leads straight to the far end of the workshop, where you can see the large roll-up door.

Avoid Obstacles: Be mindful of any small carts or equipment that may be on the right side as you proceed forward.

This pathway ensures you navigate through the workspace efficiently, avoiding any potential obstacles while moving towards the large roll-up door at the back.

# Case II Pathway to the Rollup Door (5/23, 2024)

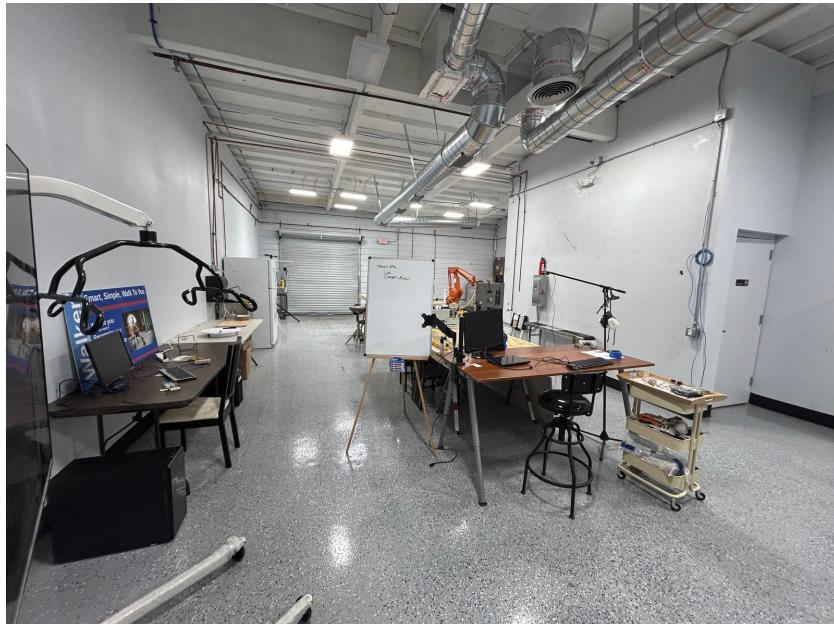
1. Attach image to ChatGPT  
4.0



2. At the prompt, type in “**find pathway**” (open ended inquiry)



3. The ChatGPT response

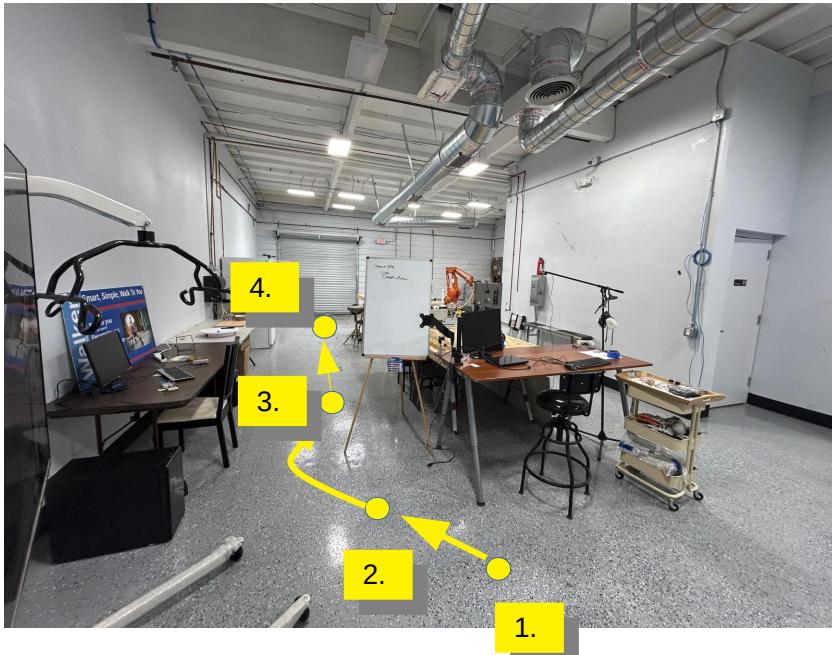


To find a clear pathway to the roll-up door in the workshop, follow these steps:

1. Start at the Beginning: Begin at the lower part of the image near the first workbench and computer setup.
2. Move Forward Along the Left Side: Proceed straight down the corridor. Stay closer to the left side of the workspace to avoid the central tables and equipment on the right.
3. Navigate Around the Whiteboard: Continue moving forward until you reach the whiteboard on the stand. Navigate around it by passing on its left side.
4. Proceed Past the Central Work Area: Keep moving straight, staying on the left side of the central work area. This area has desks and equipment, so avoid any items on the floor.
5. Reach the Far End Near the Roll-up Door: Continue straight until you reach the far end of the workshop where the roll-up door is located.

By following this pathway, you will move through the workshop efficiently and avoid obstacles, ensuring a clear route to the roll-up door.

# Handmade Land Marks for Case II Pathway to the Rollup Door (5/23, 2024)

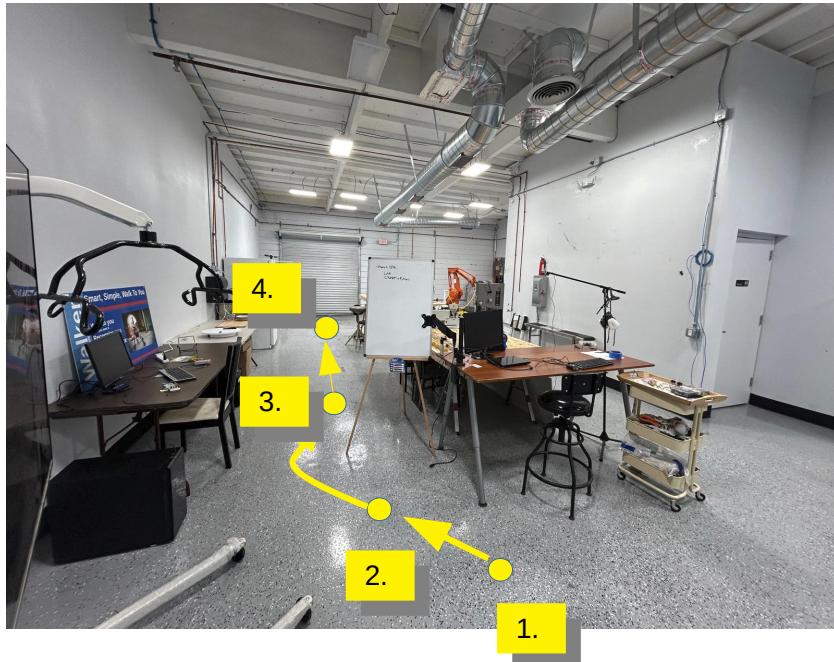


To find a clear pathway to the roll-up door in the workshop, follow these steps:

1. Start at the Beginning: Begin at the lower part of the image near the first workbench and computer setup.
2. Move Forward Along the Left Side: Proceed straight down the corridor. Stay closer to the left side of the workspace to avoid the central tables and equipment on the right.
3. Navigate Around the Whiteboard: Continue moving forward until you reach the whiteboard on the stand. Navigate around it by passing on its left side.
4. Proceed Past the Central Work Area: Keep moving straight, staying on the left side of the central work area. This area has desks and equipment, so avoid any items on the floor.
5. Reach the Far End Near the Roll-up Door: Continue straight until you reach the far end of the workshop where the roll-up door is located.

By following this pathway, you will move through the workshop efficiently and avoid obstacles, ensuring a clear route to the roll-up door.

# Case III Pathway to Central Work Area (5/23, 2024)



To find a pathway to the central work area in the workshop, follow these steps:

1. Start at the Entrance: Begin at the bottom of the image near the first workbench and computer setup.
2. Move Forward Along the Center: Proceed straight down the main corridor of the workshop.
3. Navigate Around the Whiteboard: As you move forward, you will encounter the whiteboard on a stand. Pass by it on the right side.
4. Reach the Central Work Area: After passing the whiteboard, you will be in the central work area where desks and equipment are set up.

Here's a step-by-step visual reference:

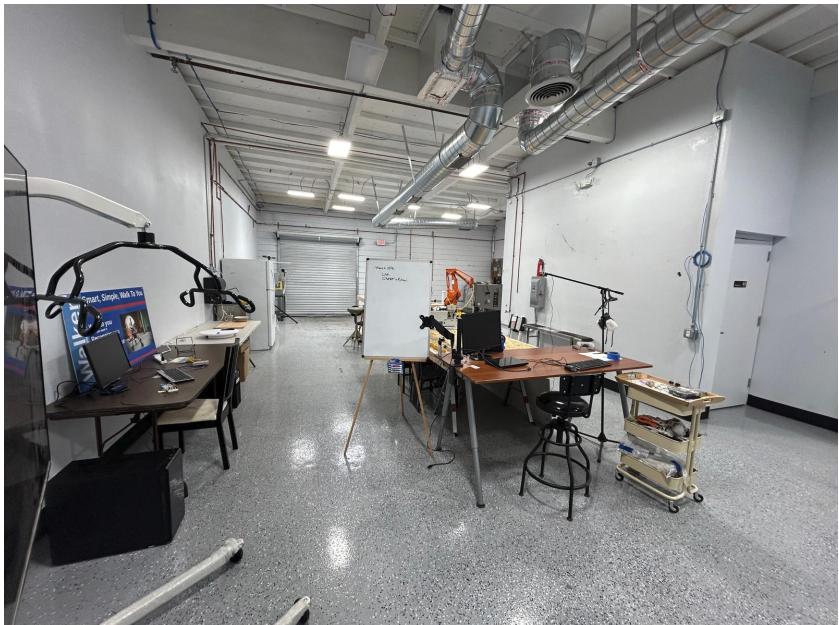
- Step 1: Start near the computer desk at the bottom of the image.
- Step 2: Move straight down the corridor.
- Step 3: Pass the whiteboard on the right side.
- Step 4: Enter the central work area, which is equipped with desks and various tools. This pathway leads you directly to the central work area without encountering significant obstacles.



## **Case III Pathway to Central Work Area (5/23, 2024)**

# Semantic to Graphical Pathway Using Python (5/23, 2024)

1. pars the semantic pathway to generate landmark points  $P_i(x_i,y_i)$  for  $i=1,2,\dots, M$



2. Form pathway segment by connecting consecutive land mark points  $P_i$  and  $P_{\{i+1\}}$