

# **Cozmo Tour Guide**

2023 A Presentation by: Kevin Ren Arthur Jakobsson

### **The Problem**

- Imagine you are a non-Pittsburgh native who wants to learn more about the city
  How can you do so without actually driving through the dozens of bridges and neighborhoods that the city has to offer?
- Furthermore, can we leverage all the information on the internet (and stored inside LLMs like ChatGPT) about Pittsburgh that might take a while to look up manually?
- Finally, how can we do this visually e.g. 'walk' around Pittsburgh without physically walking?



## Our Solution: Cozmo!

- What if a robot could drive along a small map of the city?
- What if this robot could serve as a functional tour guide of Pittsburgh?
- What if this robot could draw from ChatGPT's encyclopedic knowledge of Pittsburgh to answer any questions?



## **Our Approach**



### **Navigability**

Give Cozmo a way to travel to these

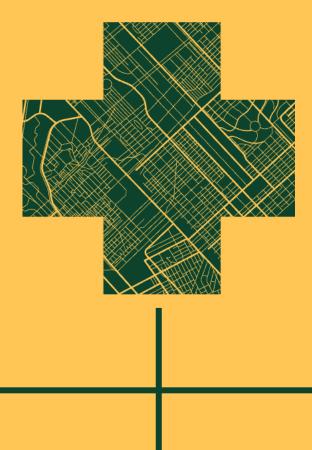
sites iteratively

#### **Building a Map**

Manually select some spots in Pittsburgh for Cozmo to travel to







#### **Communication**

Allow users to ask Cozmo about where they are, what to do, and give personalized recommendations

### **Implemented Features**

- GPT integration knowledge of:
  - current location and facts about it
  - personal preferences and name
- ability to ask gpt questions at each location while cozmo 'knows' that it's at that location!
- navigation along a prepared route of 11 locations across Pittsburgh



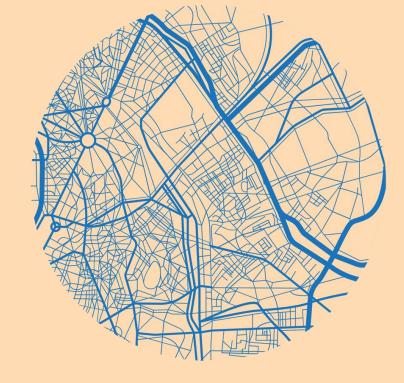
### vs' that it's at that location! rgh





#### **Cognitive Robotics Final Project** Kevin Ren and Arthur Jakobsson





### **Limitations and Future Work**

#### Limitations

- Rigid tour structure you can strictly move forward 1 site at a time
- Lack of 3D integration Cozmo strictly moves ('blindly') along a 2D map, with no vertical stimuli

#### **Future Work**

- based on what's in its camera?
- Pittsburgh?
- were actual bridges?





 Integration with CV - what if Cozmo could tell what neighborhoods and sites were nearby, More flexible tours - what if you could go backwards? what if you could go anywhere in

More visually appealing map – what if bridges



# Thank you!!