



# Cozmo Tour Guide

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# 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



## Building a Map

Manually select some spots in Pittsburgh for Cozmo to travel to

## Navigability

Give Cozmo a way to travel to these sites iteratively



## 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

# Demo!!!



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

- Integration with CV - what if Cozmo could tell what neighborhoods and sites were nearby, based on what's in its camera?
- More flexible tours - what if you could go backwards? what if you could go *anywhere* in Pittsburgh?
- More visually appealing map - what if bridges were actual bridges?





**Thank you!!**