



Cozmo Dream House

Nora T. Everly



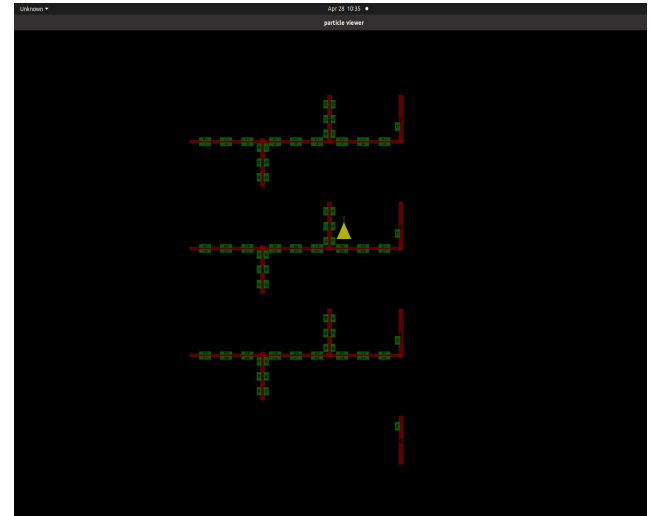
Problem to Solve

Navigation through the Dream House:

- Navigate to specific room
- Give tour of dream house
- Recognize portraits on the wall and report who is in what room

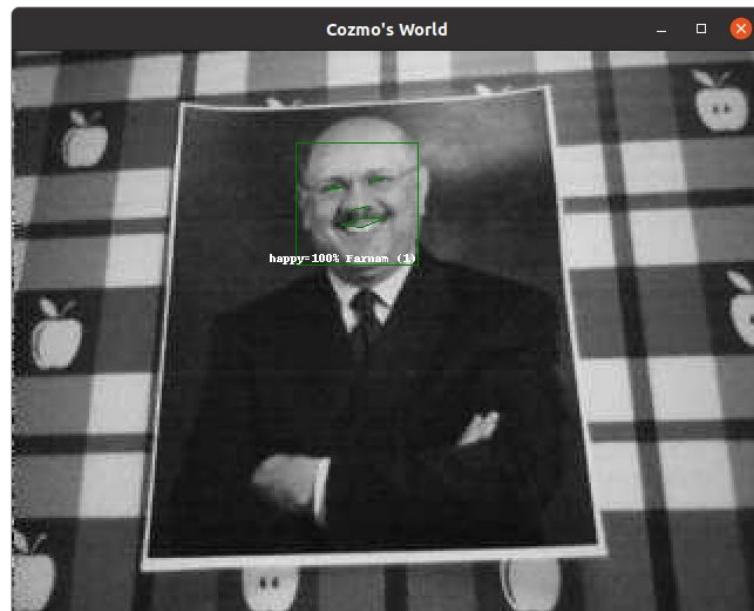
Approach to House Navigation

- Used particle filter to localize Cozmo
- Created Roomobjs in the world and used the corner points to determine what room Cozmo is in
- Roomobjs store adjacent rooms and doorways so used those to navigate through the house
- Had to keep track of floors to determine when to use the elevator



Portrait Recognition

- Used built-in Cozmo facial recognition
 - Can store up to 10 faces
- When he sees a face, he can localize with the particle filter to determine where that portrait is





Results

- Cozmo can navigate throughout the Dream House (all floors)
 - Had some problems with the existing particle filter representation of Dream House so had to adjust the room dimension parameters so that Cozmo would not get lost
- Cozmo can “bring visitor” to specified room
- Cozmo can recognize portraits on wall



Future Work

- Add obstacles to Dream House for Cozmo to navigate around
- Have obstacles block doorways and elevator -> Cozmo either has to find other path or move obstacles



Demos