

19.11.23

CSE461

"Lecture-9"

Robot Navigation

→ Mapping and Exploration:

Mapping and Exploration are called collection of Algorithm and we will focus on "Occupancy Grid" Algo.

# Occupancy Grid:

→ The Env/World is Grid structure and it is discrete.

→ It can have 3 parts in the cell and those are occupied or empty or unknown.

→ Construct a Sensor Model:

~~use~~ use a sensor and then measure the area. ~~the~~ area is ~~fill~~ fill with.

then ~~we~~ mapping model then we will build a Algo which is "Simple OG Mapping Algorithm."

1. Initialize a Grid
2. Update the Grid
3. Pick a Next Move
4. Loop forever

} more details  
on Slide

But the problem is we are moving random. So, it is not efficient. So, we have to make the next move better. For that we will use "Frontier Based Exploration"

### # Frontier Based Exploration:

→ here we will ~~select the~~ select the frontier cell insted of choosing random cell.

→ frontier cell = a unknown cell with at ~~least~~ least one empty empty cell.

→ Then again plan the path.

