Object-Goal Navigation task by learning from environment
Computer Vision (CS6350)

TPA-14

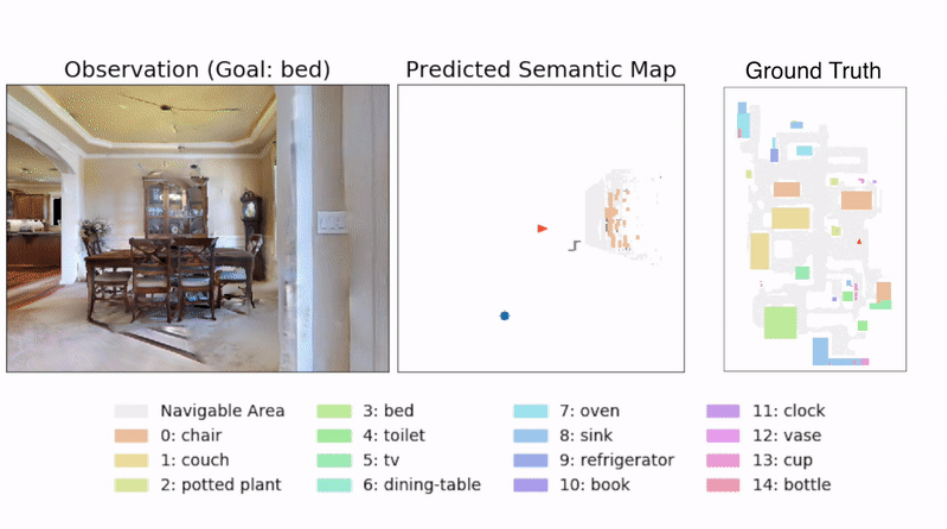
1. Problem statement:

In the Object-Goal navigation OGN) task, an agent is required to go close to an object of a specific class (such as fridge or bed) -referred to as Object-Goal. The agent starts from a random position within an unknown and static environment.The solution of OGN task involves multiple challenges. Firstly, the agent must explore the environment in an effective way to learn a map of the environment. Then it has to recognize new and familiar objects in the environment and finally it must be able to approach the (goal) object by a path planning algorithm which decides which actions to execute. The goal of this TPA is to train a model to perform an object-Goal specific navigation task by including the knowledge of its environment during training [1].

2. Input:

Set of RGB-D images/panorama images of a scene. You can use a simulator to navigate in the scene[2].

3. Output (example):



4. Dataset:

1. MatterPort: https://niessner.github.io/Matterport/
2. Habitat Simulator: https://aihabitat.org/
3. AI2-THOR: https://github.com/allenai/ai2thor

References:

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