

1. User: Where are you from?

Cleverbot: New Zealand.

User: Where are u from?

Cleverbot: Can't tell you.

User: Where r u from?

Cleverbot: I'm from California.

User: Which color is your favorite?

Cleverbot: Green.

User: Which kind of pets do you like?

Cleverbot: Metal, alternative, rock music.

User: Do you like listening to music?

Cleverbot: Yes, it's one of the human's favorites.

User: Do you watch NBA?

Cleverbot: Tf2?

User: What is Tf2?

Cleverbot: I don't know, you said it first.

User: How are you today?

Cleverbot: Good, and you?

User: Doing great.

Cleverbot: Do you listen to kpop?

User: No, what is that?

Cleverbot: It's a video game.

User: What kind of video game?

Cleverbot: First person shooter.

User: Sounds good!

The purpose of Turing test is to measure whether or not a computer is capable of thinking like a human being. From my perspective, this is a good AI but still not passing Turing Test. First, I used some abbreviations of daily use language such as “r” representing “are” and “u” representing “you” to chat with Cleverbot. It can give right feedback. However, when I was asking about pet, it answered about music. Moreover, the conversation is not continuous when I was talking NBA, but the conversation is continuous when the Cleverbot was leading later.

In conclusion, Cleverbot can give appropriate feedbacks when the question is common, or it is leading the conversation, but it is obviously to notice that it is not a “human” when talking uncommon topics and some other cases.

2.a.

Sensors:

1. Cameras

As a pizza delivery robot, it is considered to acting like a autonomous car. Cameras to detect road situation are necessary.

2. Radars

Radars can help detect variety road situations that cameras might not be able to detect correctly and timely.

Actuators:

1. Directing—Steering

2. Stopping—Brakes

Performance measures

1. Deliver pizza

2. Speed

2.b.

1. Fully observable: Sensors likes radars and camera could give complete state of environment. All states of this robot are observable, e.g., delivering/Stopping/etc.

2. Multi-agent: the robot itself and the owner, who gives the command to the robot.

3. Deterministic: the robot could detect direction by itself and identify whether pizza is delivered or out of delivery and determine where it should move for next step.

4. Sequential: Robot should be able to deliver pizza in pre-set order, e.g., order time/location priorities.

5. Dynamic: the environment can change while the agent is deliberating, e.g., order cancelled/ road maintenance/etc.

6. Discrete: Since road environment is complex, new agents might be added to the road environment at any time. There are not a fixed number of environment states.

2.c.

Utility-based agent: Pizza delivery robot has clear target which is to deliver pizza to certain address. In addition, the delivery of order has many that should be considered, e.g., delivery time and delivery route. In order to get optimal delivery route and time, robot should consider users' requirements and expectations. In this case, I consider it is a utility-based agent.

3.

- [1] D. Biswas, "Privacy Preserving Chatbot Conversations," *2020 IEEE Third International Conference on Artificial Intelligence and Knowledge Engineering (AIKE)*, 2020, pp. 179-182, doi: 10.1109/AIKE48582.2020.00035.

URL: <https://ntserver1.wsulibs.wsu.edu:2343/document/9355474>

- [2] S. Lee, J. Lee, W. Lee, S. Lee, S. Kim and E. T. Kim, "Design of Integrated Messenger Anti-virus System using Chatbot Service," *2020 International Conference on Information and Communication Technology Convergence (ICTC)*, 2020, pp. 1613-1615, doi: 10.1109/ICTC49870.2020.9289514.

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