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Ideation

- The food service industry can have Robot serve food, using Reinforcement Learning
- When the restaurant is busy, they don't have enough people to serve every customer because of that it takes longer and customers get tired of waiting.
- Our restaurant can cut down costs on employing waiters/waitresses

Defining the Project

- The ai-based waitress will use the reinforcement learning algorithm to serve the customers. For it to work, we need to have some type of sensor that can guide the robot to the right customers.
- Have a fixed placement of the tables and feed that information into the AI bot.
- Tables have numbers and the AI-based robot has a screen to select the table numbers from, whether to take orders, deliver their food, or bring back their dirty plates
- (maybe have customers themselves enter their order?)
- Let a human worker tell it what table to go to and return for food for every time a table's food is ready
- Make adjustments based on performance metrics and real-world testing.

Data Curation

- Collected data of the environment it will be in; restaurant format
- Train it to detect if someone or something gets in its way, it will stop
- Collect data of food items are ordered more often and not so often into its system
- If the customer(s) have a rewards account and want to use it, they can take the data of their most frequent food choices for better suggestions
- Fine-tuning adjustments based on performance metrics and real-world testing.

Prototyping

- Identify or design the physical components needed (robotic arm, sensors, cameras, etc.)
- Choose the programming languages, libraries, and frameworks for AI implementation (e.g., TensorFlow, PyTorch)
- Assemble hardware components and integrate them with the AI algorithms.

Addressing Unforeseen Conflicts/Disasters

- What if it stops working in the middle of serving the food?
- What if a robot serves the wrong customer who has the same order?
- What if it spills the drink/food?
  -To fix these problems, make sure the battery it is using is charged, in case it dies, have a backup plan as well. To avoid serving the wrong customers, we can have customers add their own food or each section of the restaurant has their own robot(which will avoid serving the wrong customers).
  Have the robots designated to their own sections of the restaurant so they don't crash into each other or get confused
- Not everyone will appreciate the experience (particularly older citizens)

Implementing customer feedback to improve customer satisfaction

- Develop simple surveys or feedback forms for customers to provide their experience with the robot's service
- Use feedback data to fine-tune the AI algorithms controlling the robot's behavior
- Identify recurring issues or areas of improvement highlighted by customers (e.g., speed, accuracy in serving, communication)
- Thriving with an AI Lifecycle