

Task: Bring the Apple to the Table

Models Involved:

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1. **Descriptive Models**:

- Break tasks into subtasks: Detect -> Grip -> Move -> Place.
- Example: Ensures logical task decomposition.

2. **Predictive Models**:

- Estimate time, force, and path efficiency.
- Example: Predicts optimal routes for movement.

3. **Cognitive Models**:

- Ensure actions align with user expectations.
- Example: Precise and logical execution of 'Bring'.

4. **Interactive Models**:

- Provide real-time feedback during execution.
- Example: Alerts like "Apple detected" or "Moving".

5. **Emotional Models**:

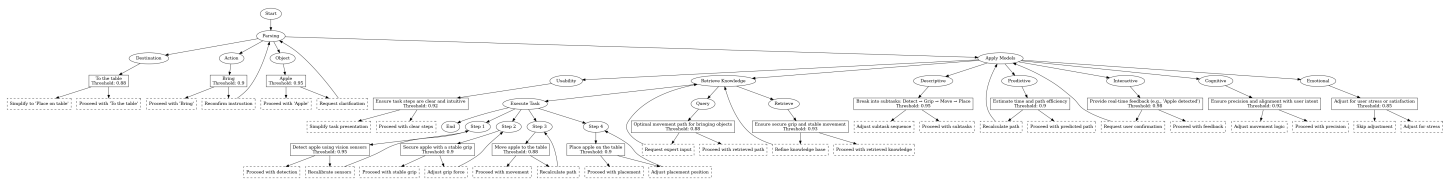
- Adjust for user satisfaction or stress.
- Example: Adapts task flow to reduce user stress.

6. **Usability Models**:

- Ensure clarity and intuitiveness in task execution.

- Example: Simplifies task steps for better understanding.

Process Flowchart:



Detailed Explanation of Steps

1. **Parsing**:

- **Action**: 'Bring' (Threshold: 0.9)
 - Outcome: Proceed with 'Bring' or reconfirm instruction if confidence is low.
- **Object**: 'Apple' (Threshold: 0.95)
 - Outcome: Proceed with 'Apple' or request clarification if detection fails.
- **Destination**: 'To the table' (Threshold: 0.88)
 - Outcome: Proceed with 'To the table' or simplify to 'Place on table'.

2. **Apply Models**:

- **Descriptive**: Break the task into subtasks: Detect -> Grip -> Move -> Place.

- **Predictive**: Estimate the time and optimal path for moving the apple.
- **Cognitive**: Align the task execution with user expectations.
- **Interactive**: Provide real-time updates like "Apple detected".
- **Emotional**: Adjust for user stress or satisfaction during the process.
- **Usability**: Ensure steps are clear and intuitive for the user.

3. **Retrieve Knowledge**:

- Query relevant paths and grip strategies for safely moving objects.
- Retrieve stable grip and movement techniques.

4. **Execution Steps**:

- **Step 1**: Detect the apple using vision sensors (Threshold: 0.95).
 - Outcome: Recalibrate sensors if detection fails.
- **Step 2**: Secure the apple with a stable grip (Threshold: 0.9).
 - Outcome: Adjust grip force if necessary.
- **Step 3**: Move the apple to the table (Threshold: 0.88).
 - Outcome: Recalculate the path if movement is obstructed.
- **Step 4**: Place the apple on the table (Threshold: 0.9).
 - Outcome: Adjust the placement position if necessary.