



AR Cooking Helper

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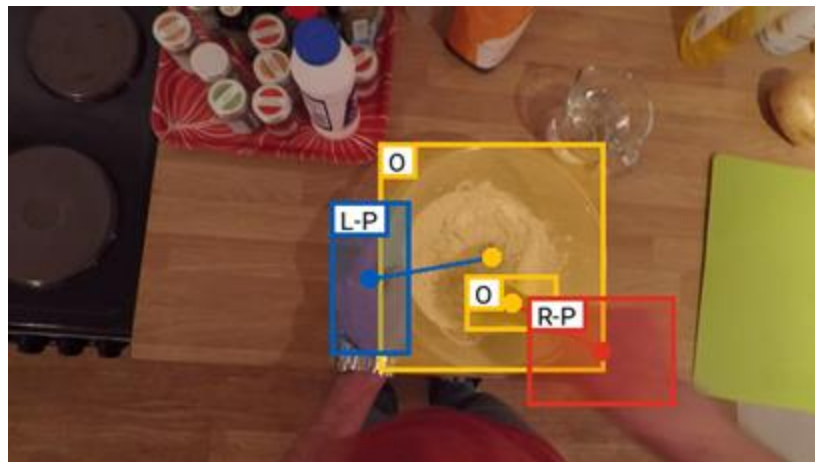
Basic Idea

- Overlay written instructions to walk a person through a recipe.
- Will recognize food and kitchen objects in order to generate instructions.
- Will be able to walk the user through at least one recipe.



Extension 1: Adding Visuals

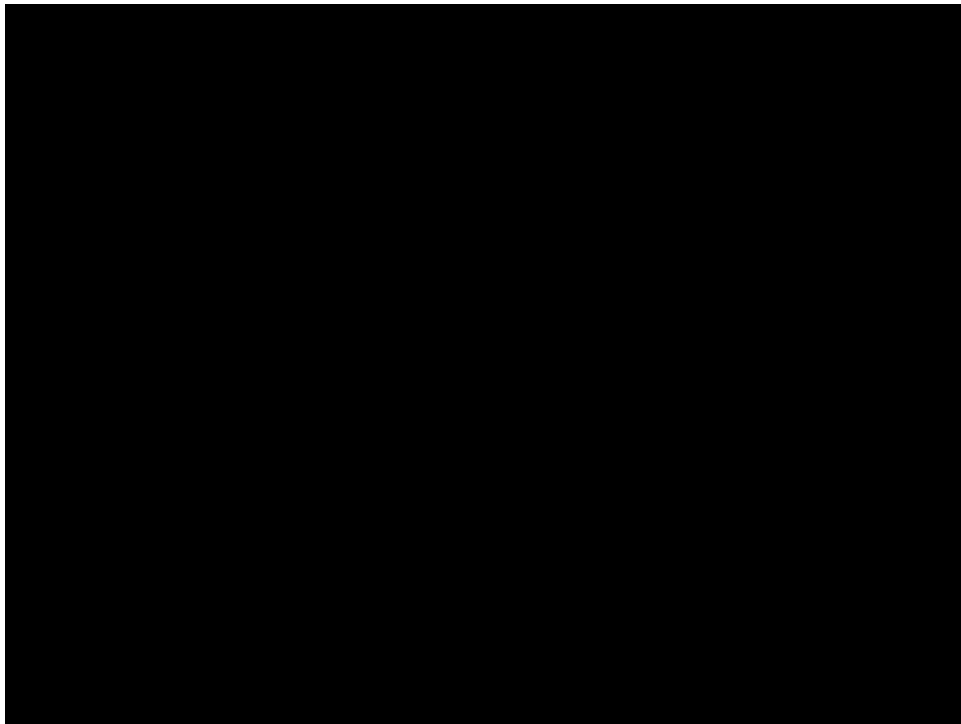
- Overlay demo motions:
 - Cutting with a knife
 - Mixing with a spoon
- Add arrows to guide movements:
 - Arrow to cutting board
 - Arrow to fridge



Extension 2: Generate New Recipes

- User can record themselves making a dish, which the Cooking Helper will use to generate a new recipe so others can cook the same thing!
- Use Action Recognition Model trained on EPIC KITCHENS dataset to extract recipe instructions from a cooking video.

EPIC-KITCHENS Dataset



- 45 kitchens
- Head-mounted camera
- 100 hours of recording
- 20M frames
- Multi-language narrations
- 90K action segments
- 20K unique narrations
- 97 verb classes
- 300 noun classes

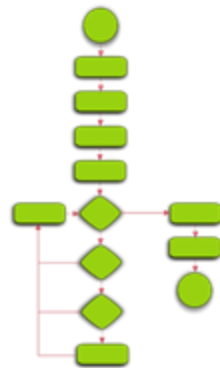
EPIC-KITCHENS + AR Cooking Helper



Chef records recipe

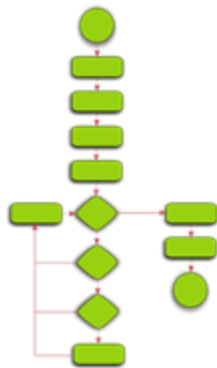


*Epic Kitchens Model
analyzes video*



*Model outputs instructions
derived from video*

EPIC-KITCHENS + AR Cooking Helper



*Instructions input into AR
Cooking Helper*



*Instructions translated
into AR recipe guidance*



*AR Cooking Helper teaches new
chefs how to cook the recipe*

Logistics

- Will be built for Android
- Will (probably) use https://github.com/tridivb/Epic_Kitchens_Object_Detector_Detector for kitchen object detection
- Will use TSN Action Recognition Model – trained on EPIC KITCHENS dataset – for recipe generation.



Questions?

