CSIE5047 Robotics: Final Project Presentation

Speech Control Care Robot

Group 9

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Outline

- Introduction
- System Overview
- Methodology
- Demonstration

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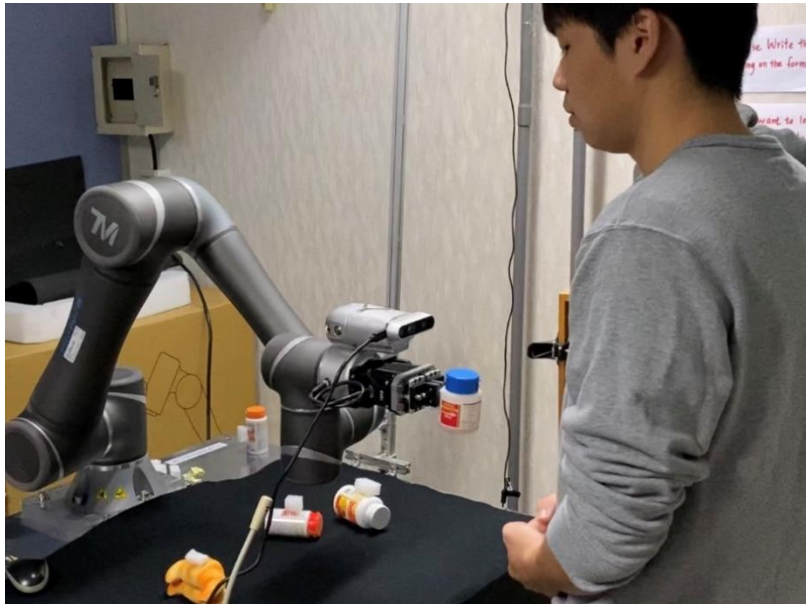
Introduction—Motivation

- For those bedridden patients, it is difficult for them to walk around and grab something thay want easily.
- Human-caring is exhausted and time-consuming.
- Robot can be deployed all year round.

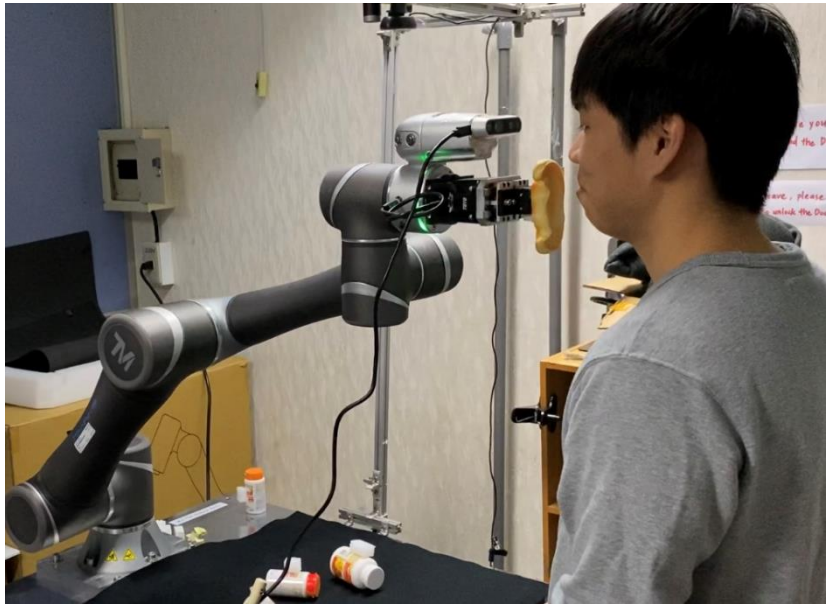
Introduction—Objective

- Devise a robot system that can perform the following two functions via speech commands:

Give the object you describe for you



Feed you the food you describe



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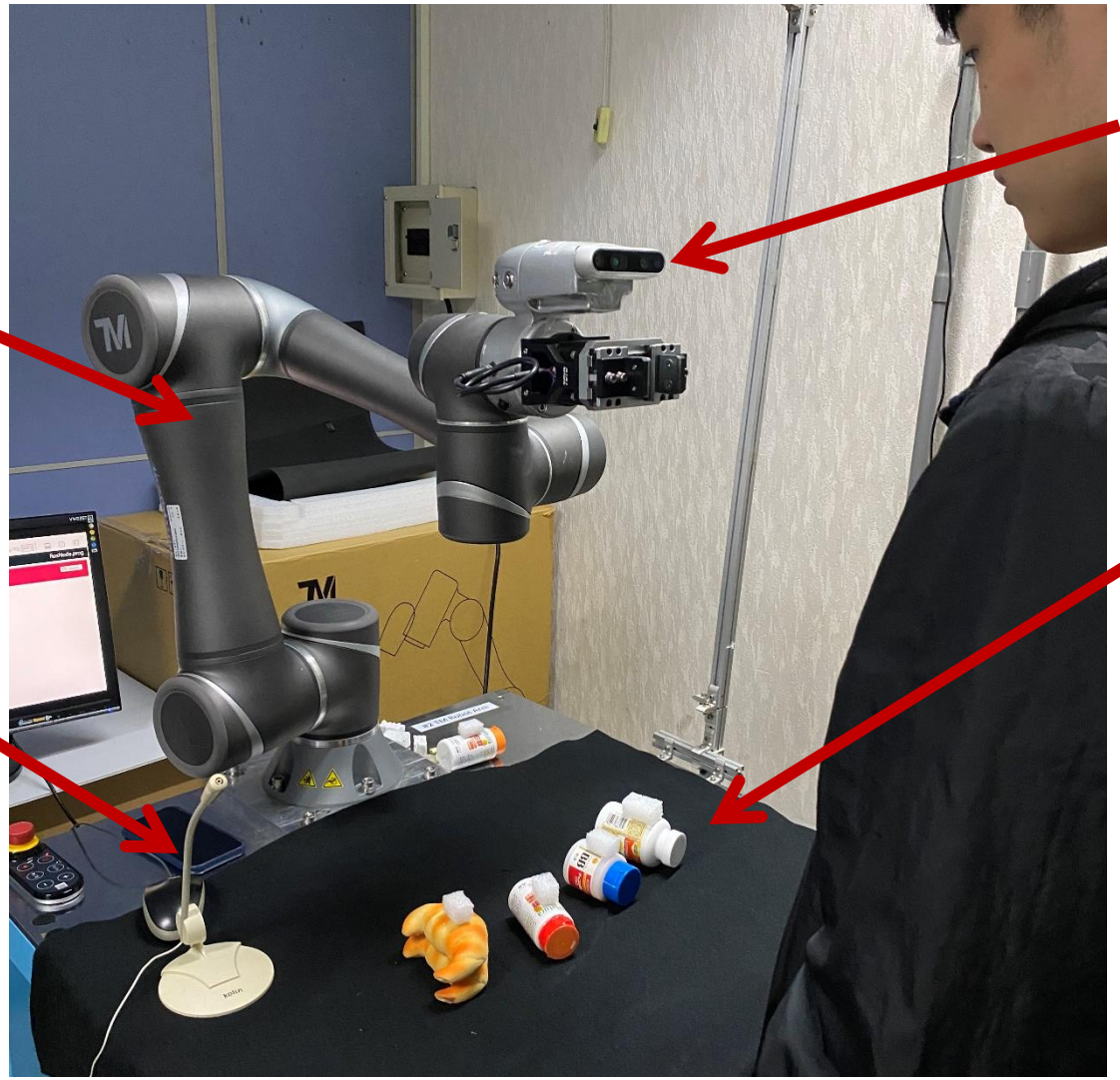
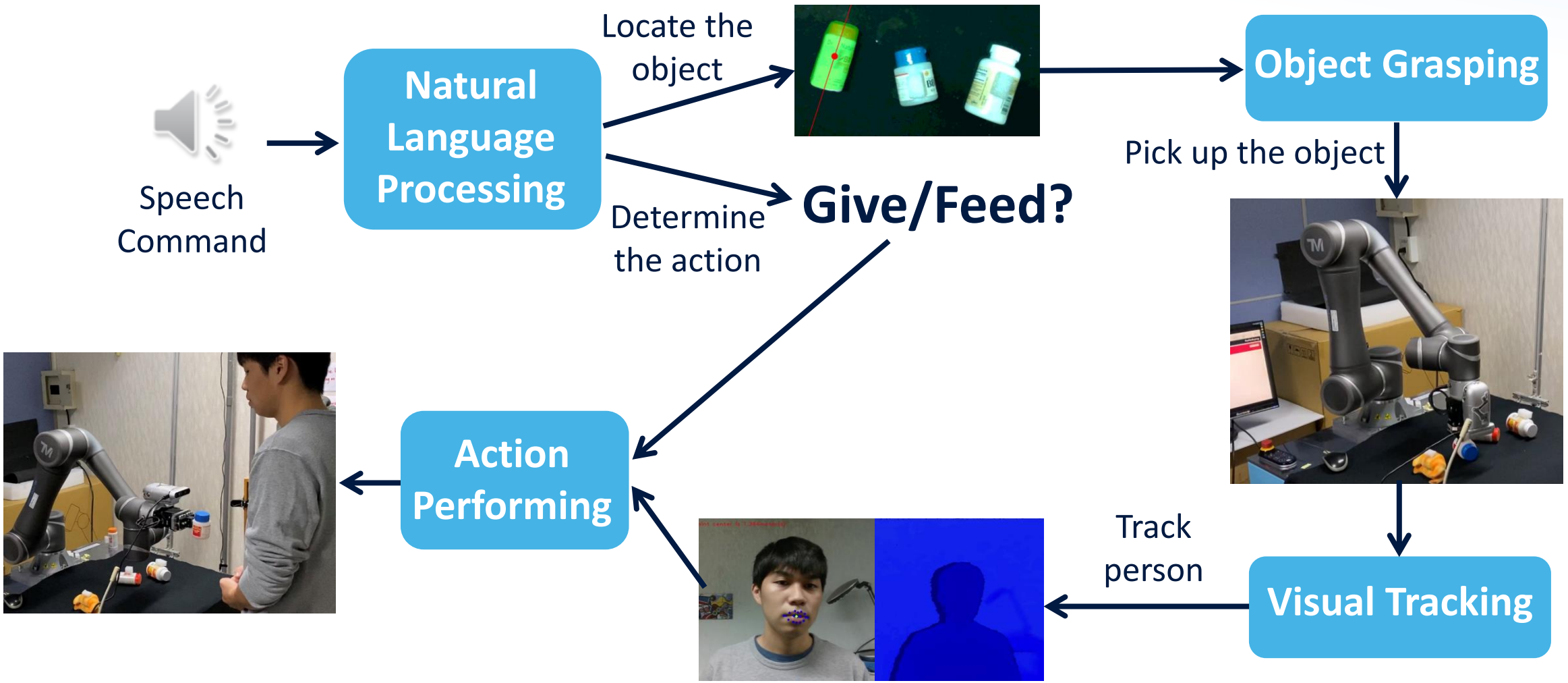
System Overview—Settings



- TM5-900 Robot Arm
- RealSence
- Workspace
- Microphone

System Overview—Flowchart



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  - **Natural Language Processing**
  - **Visual Tracking**
- Demonstration

Natural Language Processing—Concept

“Please give me the medicine jar on the left”

Natural Language Processing—Concept

Action Subtext

(which action to perform)

"Please give me the medicine jar on the left"

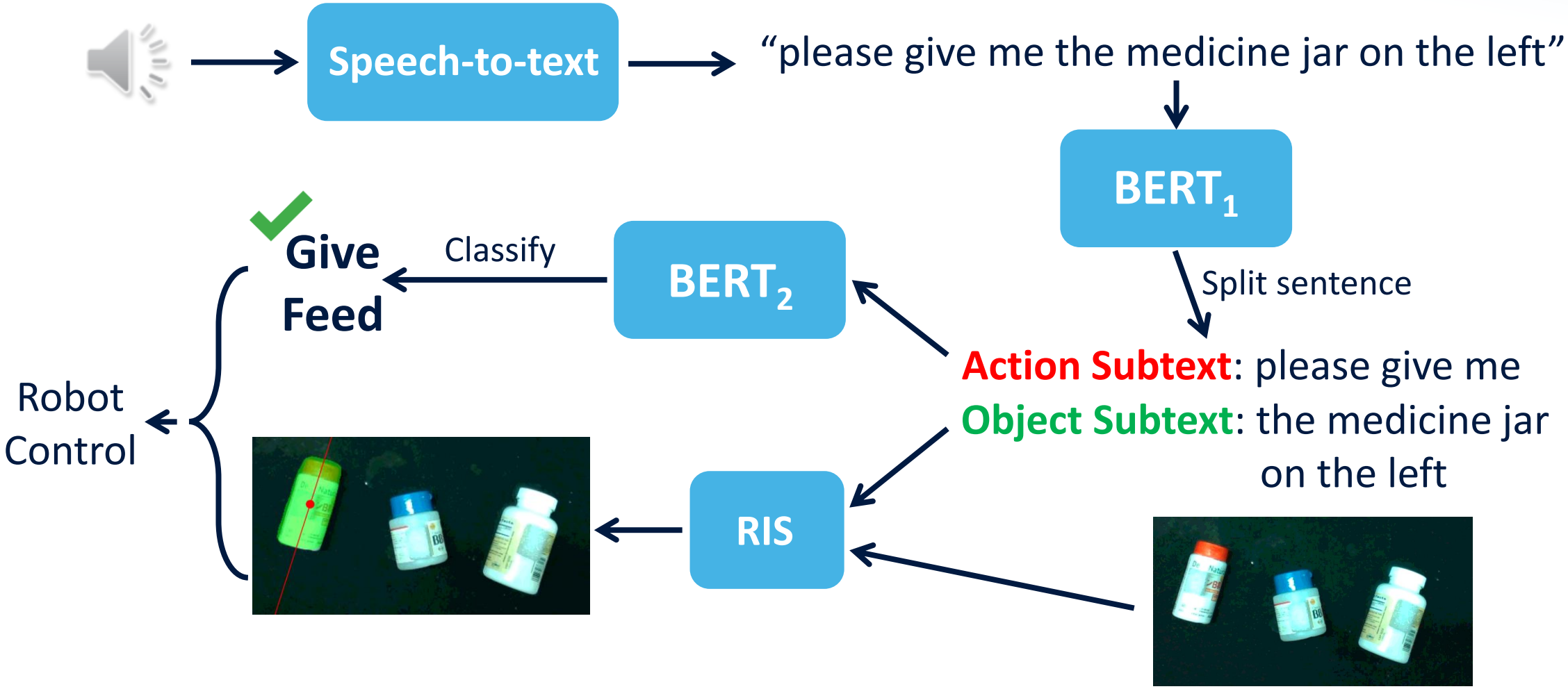
Natural Language Processing—Concept

Action Subtext
(which action to perform)

Object Subtext
(what object to pick)

"Please give me the medicine jar on the left"

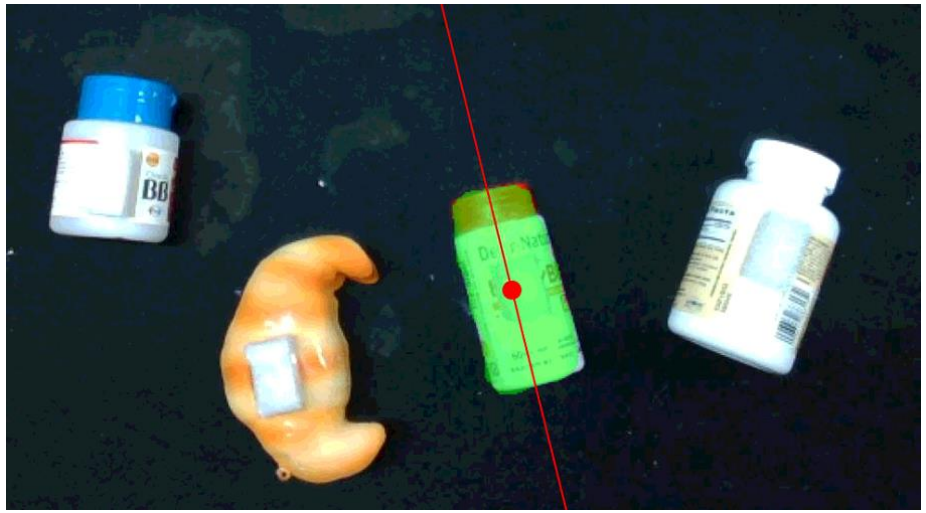
Natural Language Processing—Flowchart



Natural Language Processing—Results

Describe by location:

"the second medicine jar from the right"

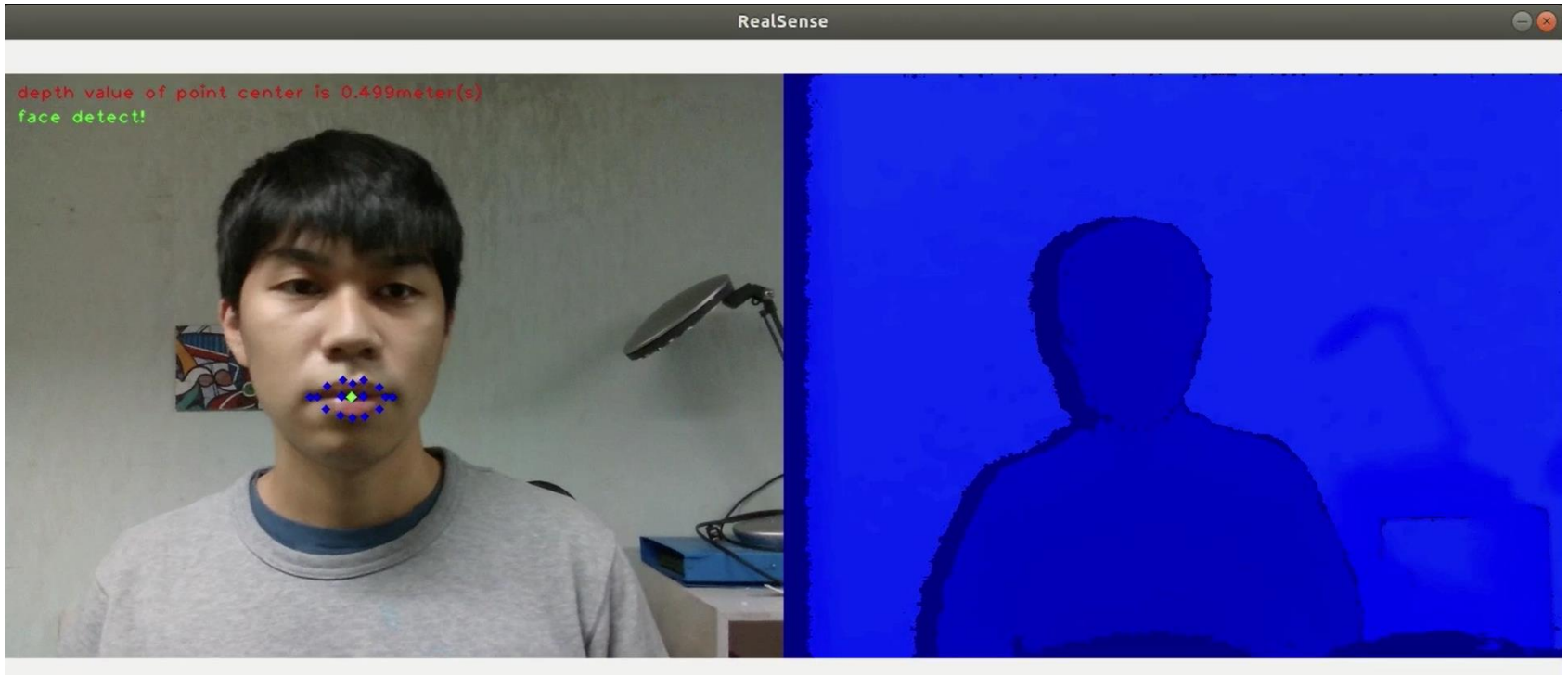


Describe by apperance:

"the medicine jar with blue cover"

Visual Tracking

- Use Face Recognition to detect mouth.
- Use RealSence to detect distance.



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Demonstration

- Demo video

Thanks for your attention!
Any Question?