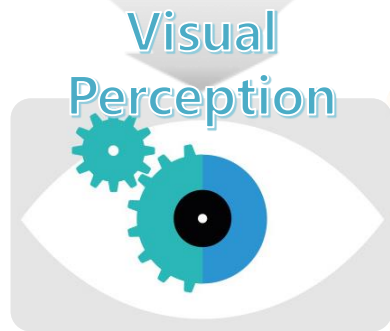
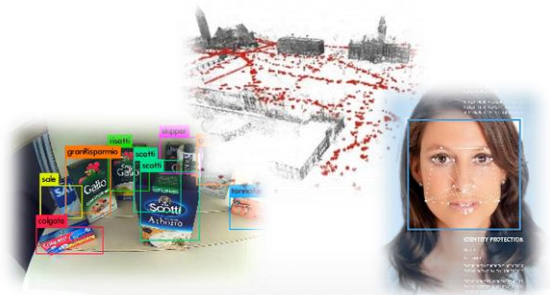


# Visual Perception Framework for Human-care Service Robots

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# 1. Introduction

## Service Robots



## Real-World Scenarios



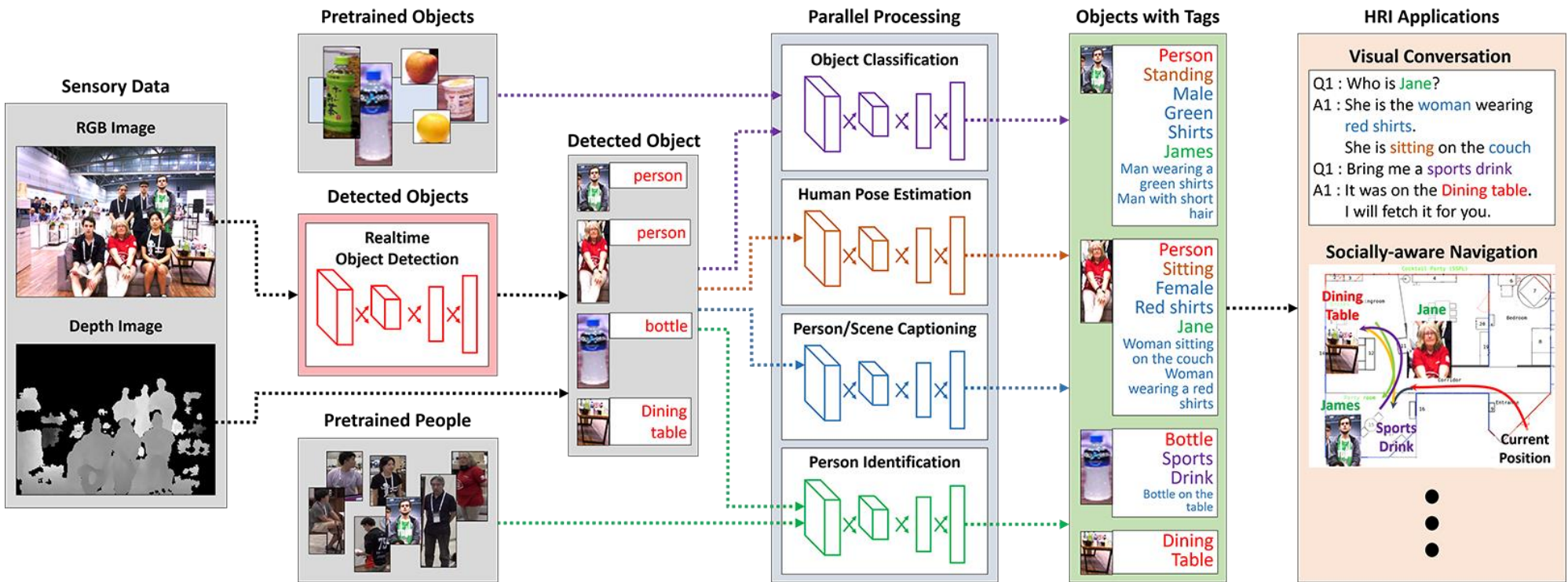
RoboCup 2017  
Nagoya Japan



RoboCup 2018  
MONTRÉAL • CANADA



# 2. Visual Perception Framework



## Object Detection



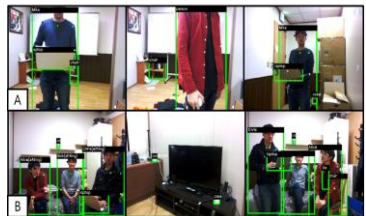
## Scene Captioning



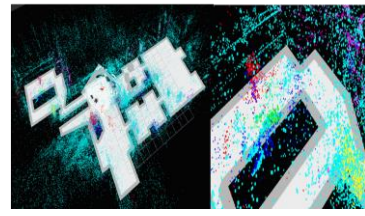
## Human Pose Estimation



## Person Identification



## Localization & Mapping





### 3. Evaluations on Real-world Scenarios

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- **Restaurant (Pepper)**
- Cock-tail Party (Pepper)
- Tour Guide (Pepper)
- Question and Answering (Pepper)
- Help Me Carry (Pepper)
- General-Purpose Services (Pepper)
- **Bring Me (HSR)**
- Tidy-up the Room (HSR)
- **Elderly-Care Service (HSR)**

