CORSMAL Containers Manipulation dataset

http://corsmal.eecs.qmul.ac.uk

CORSMAL Containers

Setups:
1. Office with natural light
2. Studio-like room with no windows

Containers: 23
(cups, drinking glasses, bottles)

Data: 1,656 images
(414 RGB + 414 Depth + 828 stereo infrared)
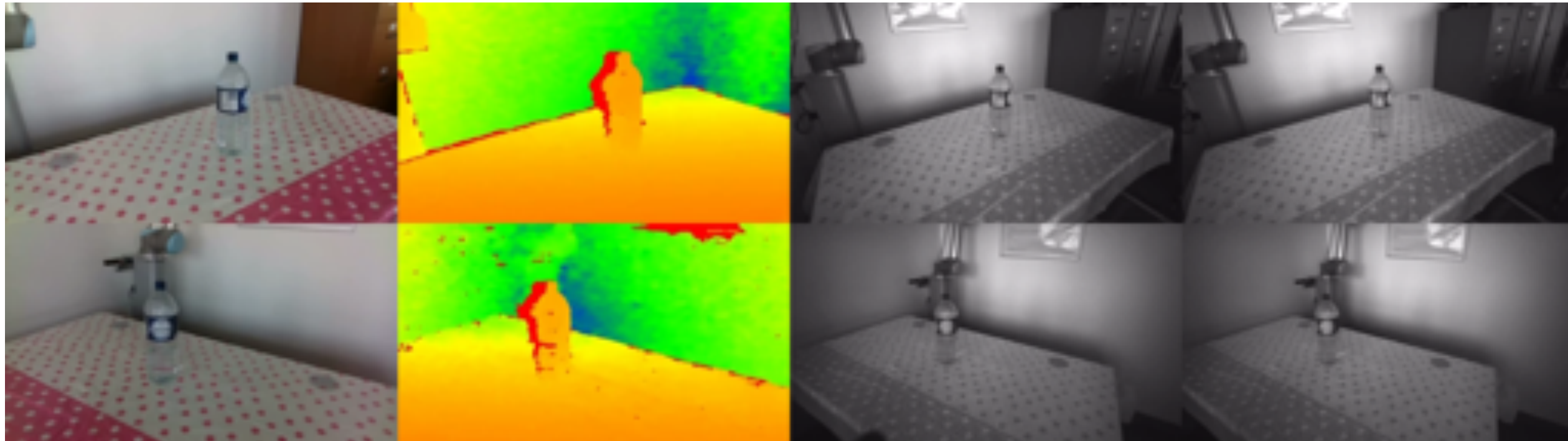
Configurations: 207
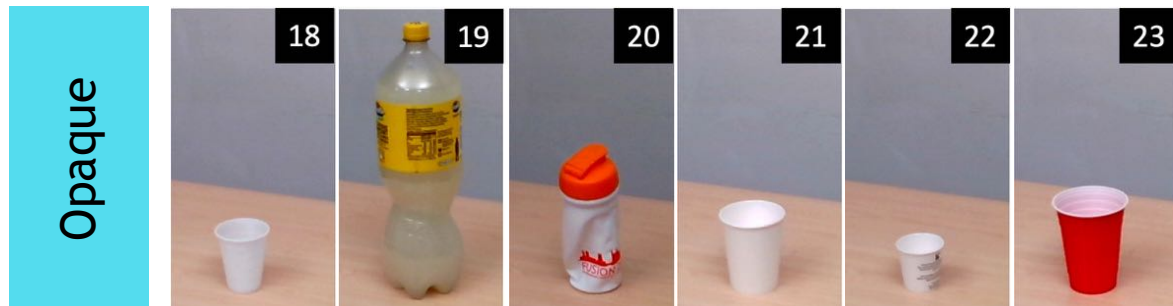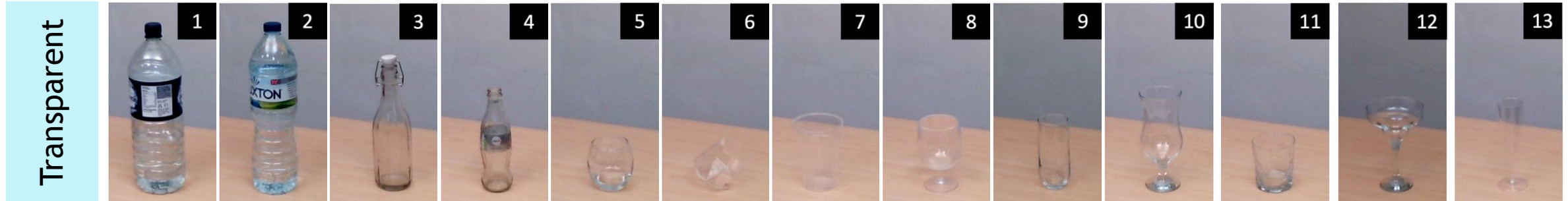(23) Objects x (3) Backgrounds x (3) Illuminations

RGB   Depth   Stereo IR

CORSMAL Containers: zooming on objects

23 containers for liquids
with different transparencies,
shapes, materials

Annotations: Width and height
(dimensions) of each object

http://corsmal.eecs.qmul.ac.uk/containers.html
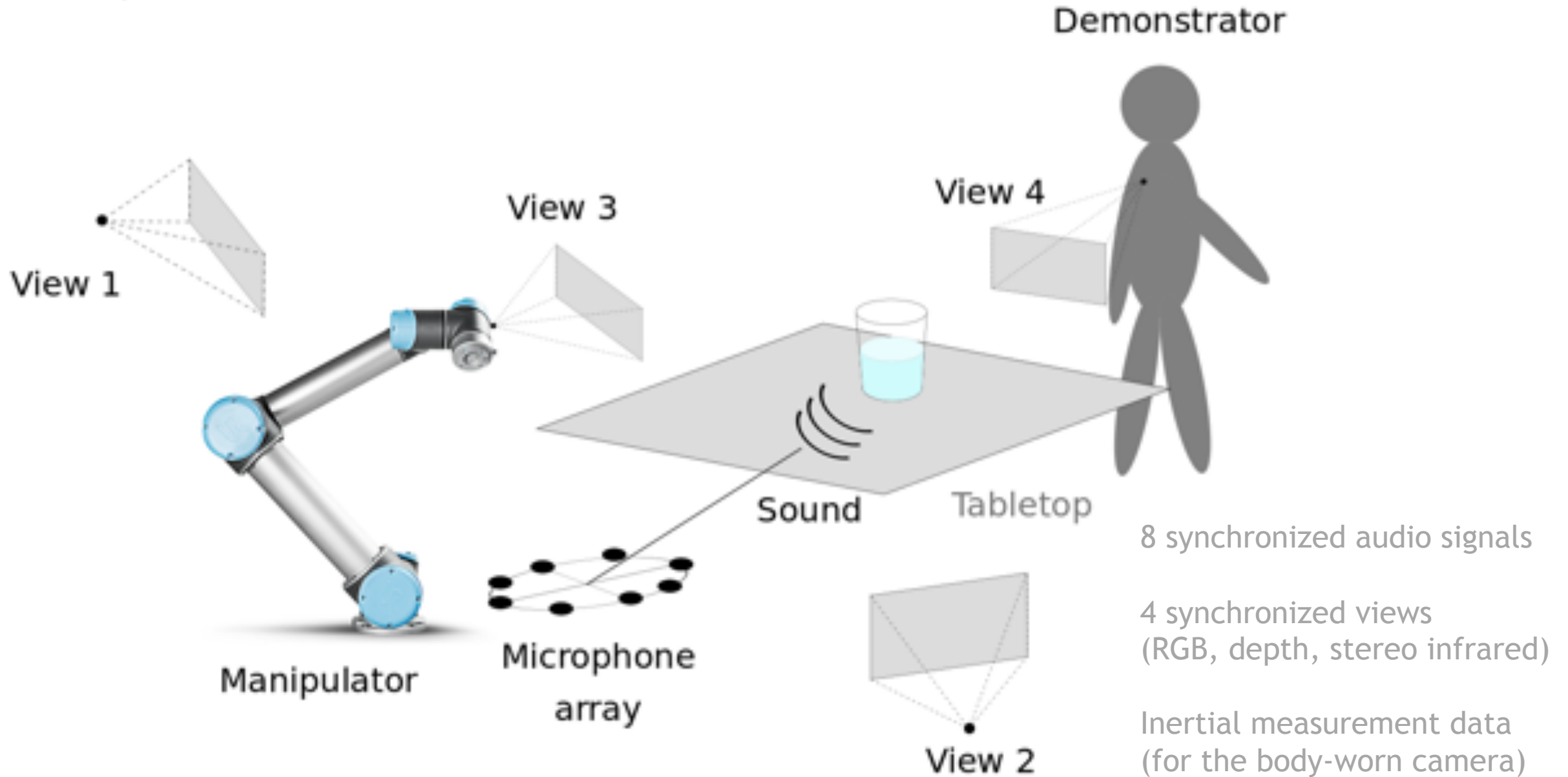
Datasets

CORSMAL Containers

1,656 images (RGB, depth, IR)
2 fixed views
23 containers

CORSMAL Containers Manipulation
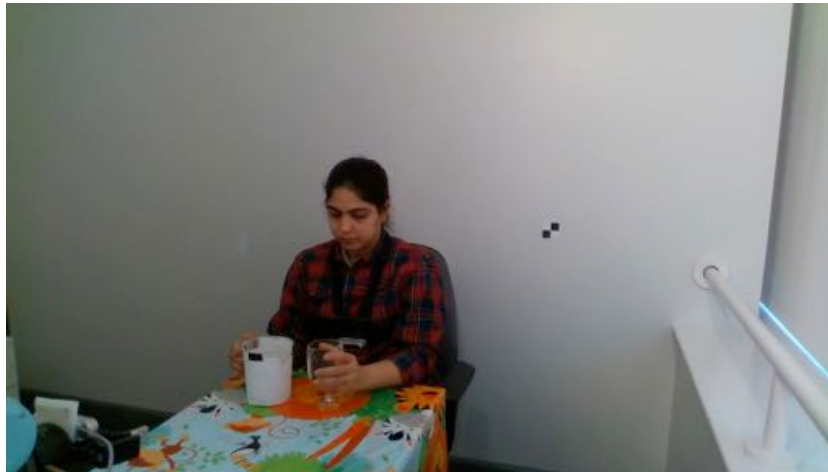
1,140 audio-video recordings
3 fixed views + 1 first-person view
15 containers x 3 fillings x 3 levels
People manipulating objects

Setup

Demonstrator

View 4

View 3

View 1

Manipulator

Microphone array

Sound

Tabletop

View 2

8 synchronized audio signals

4 synchronized views
(RGB, depth, stereo infrared)

Inertial measurement data
(for the body-worn camera)

CORSMAL Containers Manipulation

Visual challenges
Occlusions (human's hand)
Object transparency
Object shape and size
Varying background
Varying illumination

Audio challenges
Background noise:
- office noise
- outside noise

Annotations
Filling type and level
Container volume
Container and filling masses

http://corsmal.eecs.qmul.ac.uk/containers_manip.html

CORSMAL Containers Manipulation: zooming on objects

Training

Testing

15 containers
(cups, glasses, food boxes)

84 audio-visual recordings/glass
84 audio-visual recordings/cup
60 audio-visual recordings/food box

CORSMAL Challenge:
  9 training set
  3 public testing
  3 <u>private</u> testing sets

1-pound coin as reference size for the objects
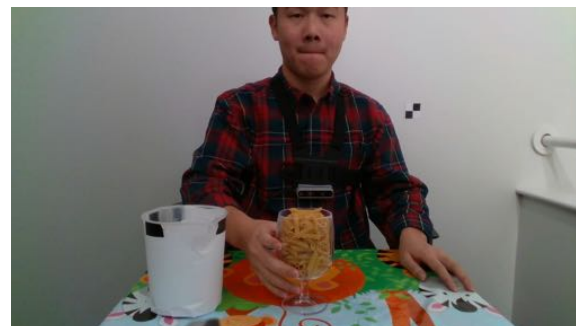
Filling types and amounts

Empty

50%

90%

Rice

Pasta

Water

Scenarios

Scenario 1

Person sitting
Object on the table

Object manipulations
• Shaking an empty or already filled food box
• Pouring a content into a drinking cup/glass

Scenario 2

Person sitting
Object handled
Occlusions

Scenario 3

Person standing
Object handled
Occlusions
Out of the field of view

CORSMAL Containers Manipulation Dataset
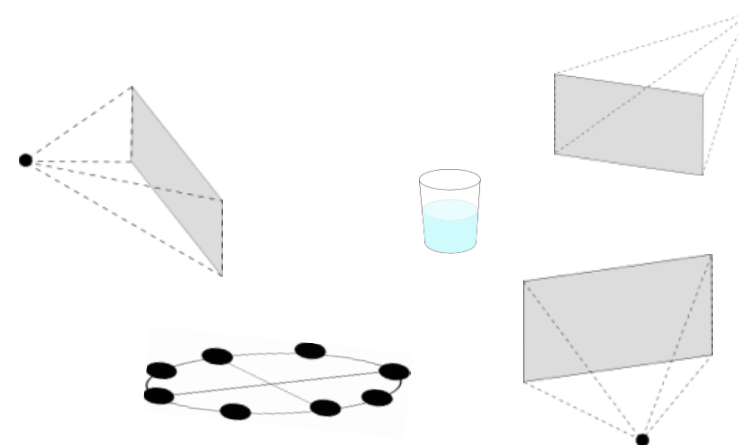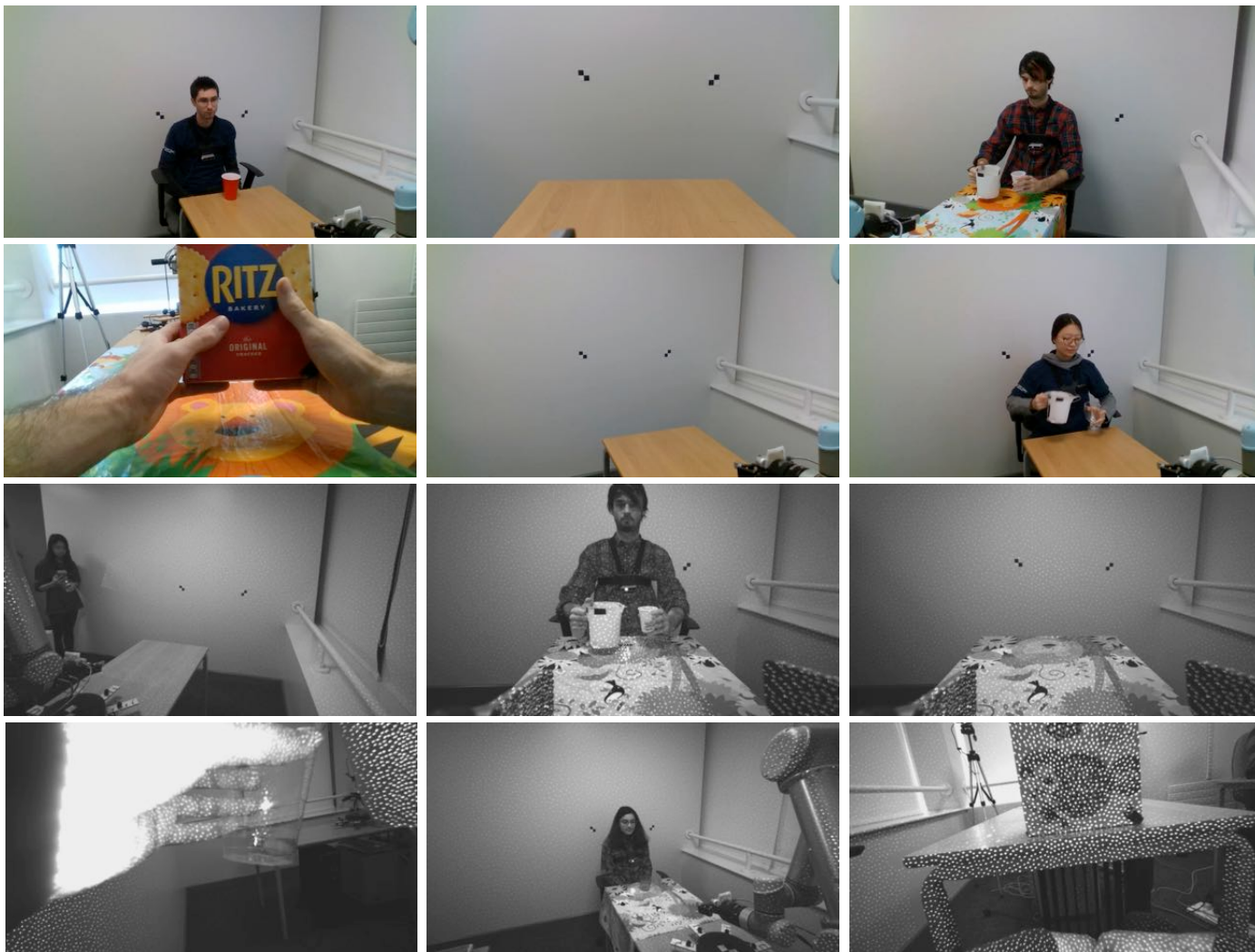
http://corsmal.eecs.qmul.ac.uk/containers_manip.html

Audio on