# Portfolio

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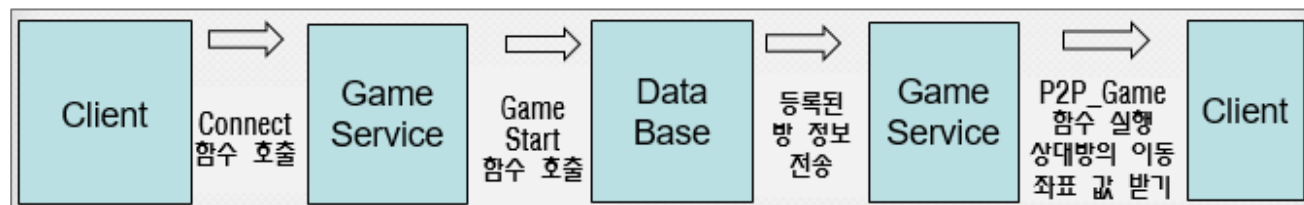
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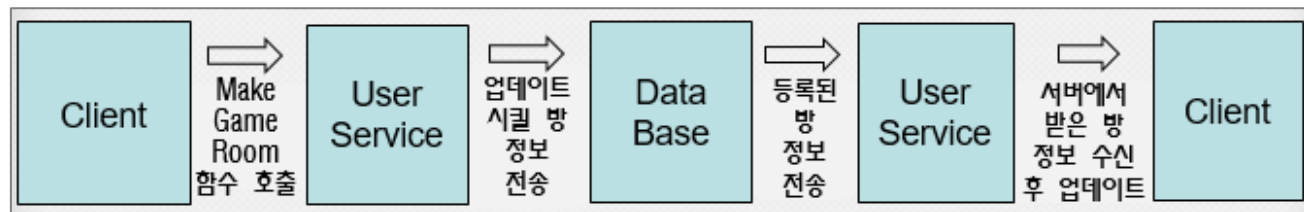
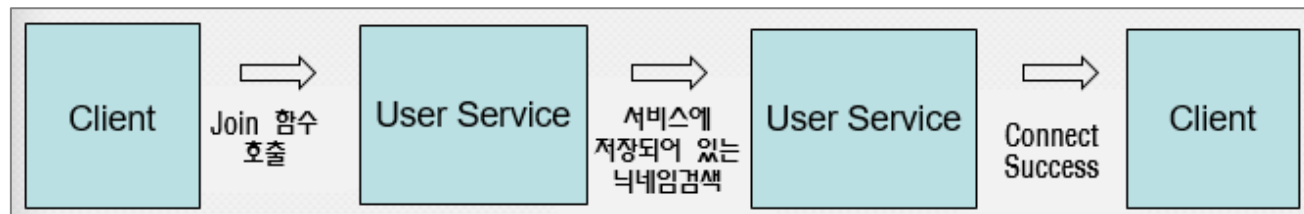- Human Pose Estimation with restored occluded mask image
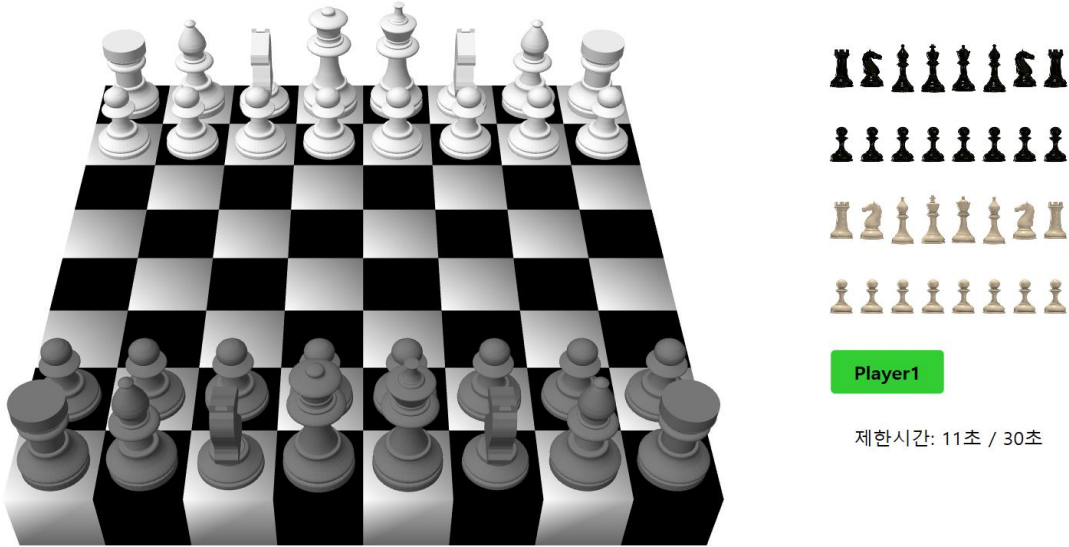
# CHESS Game
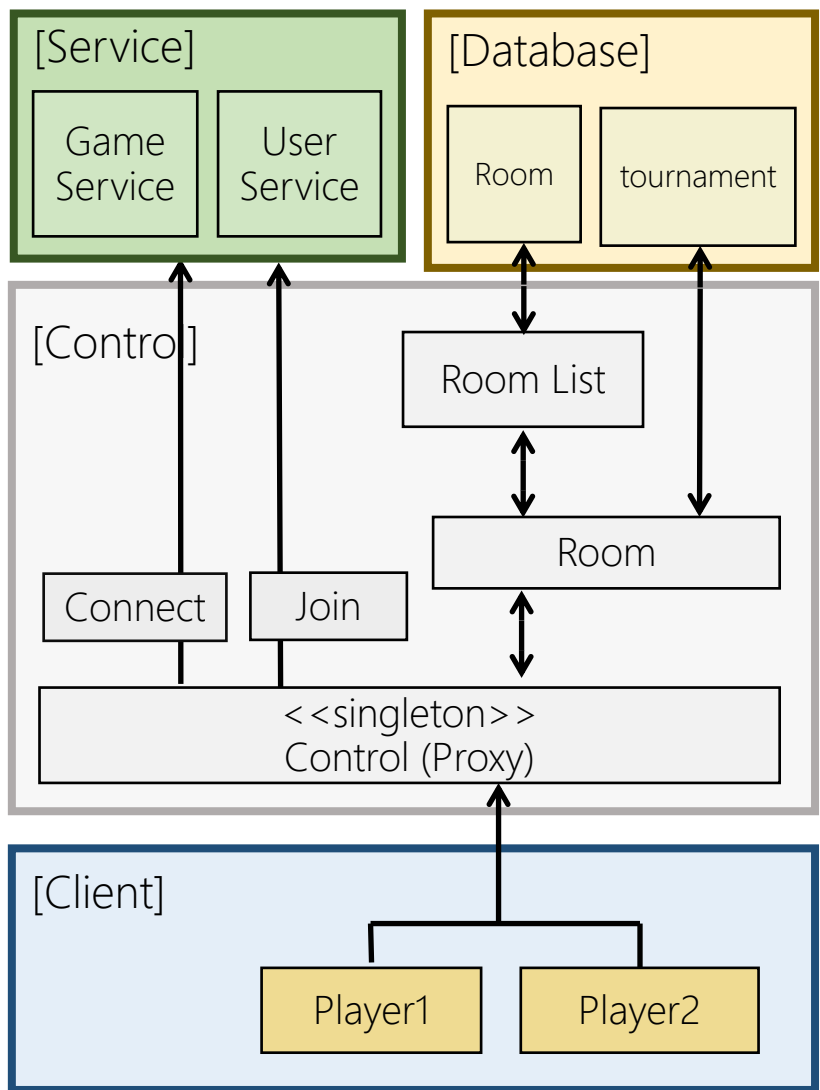
# CHESS Game





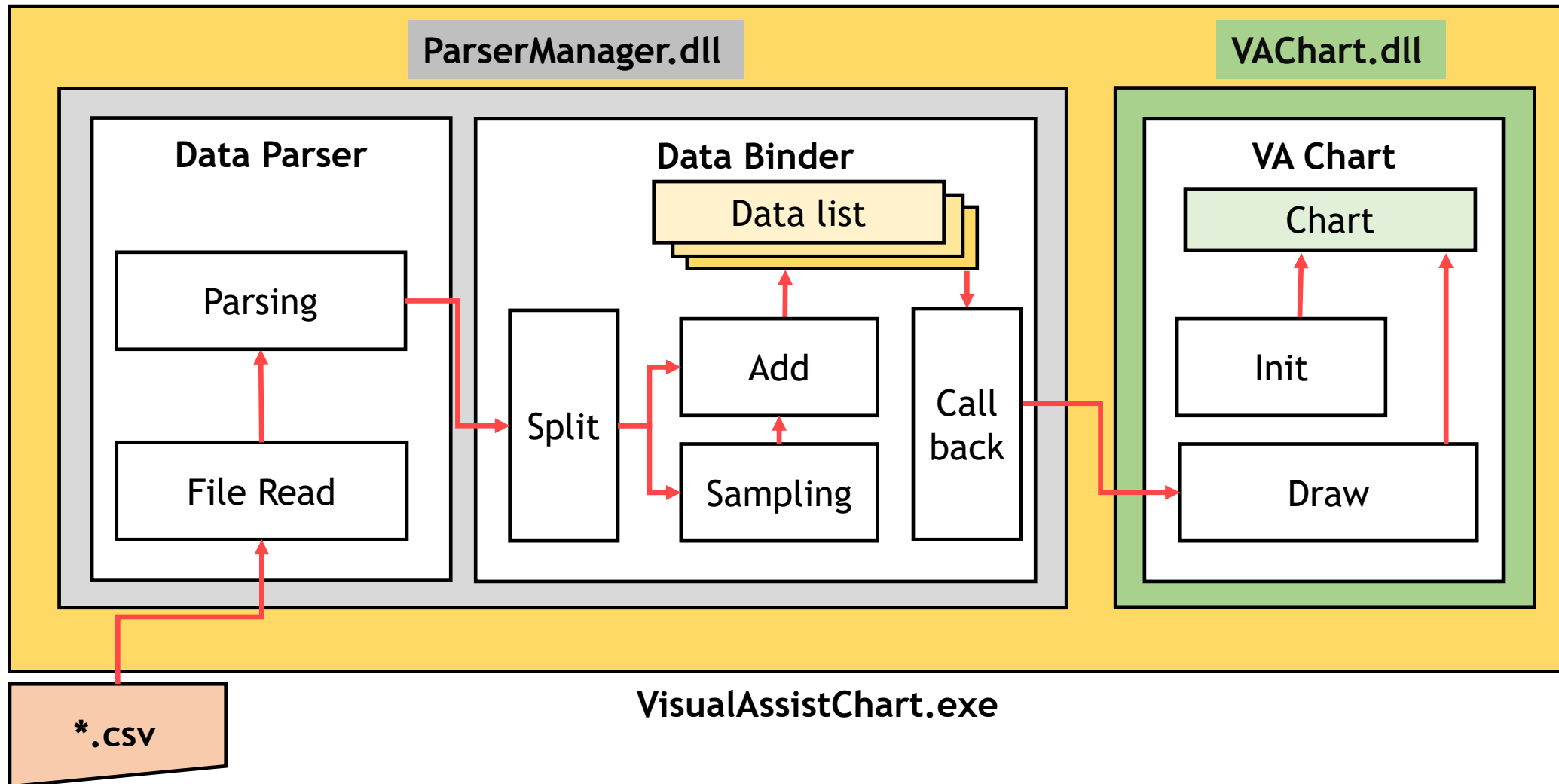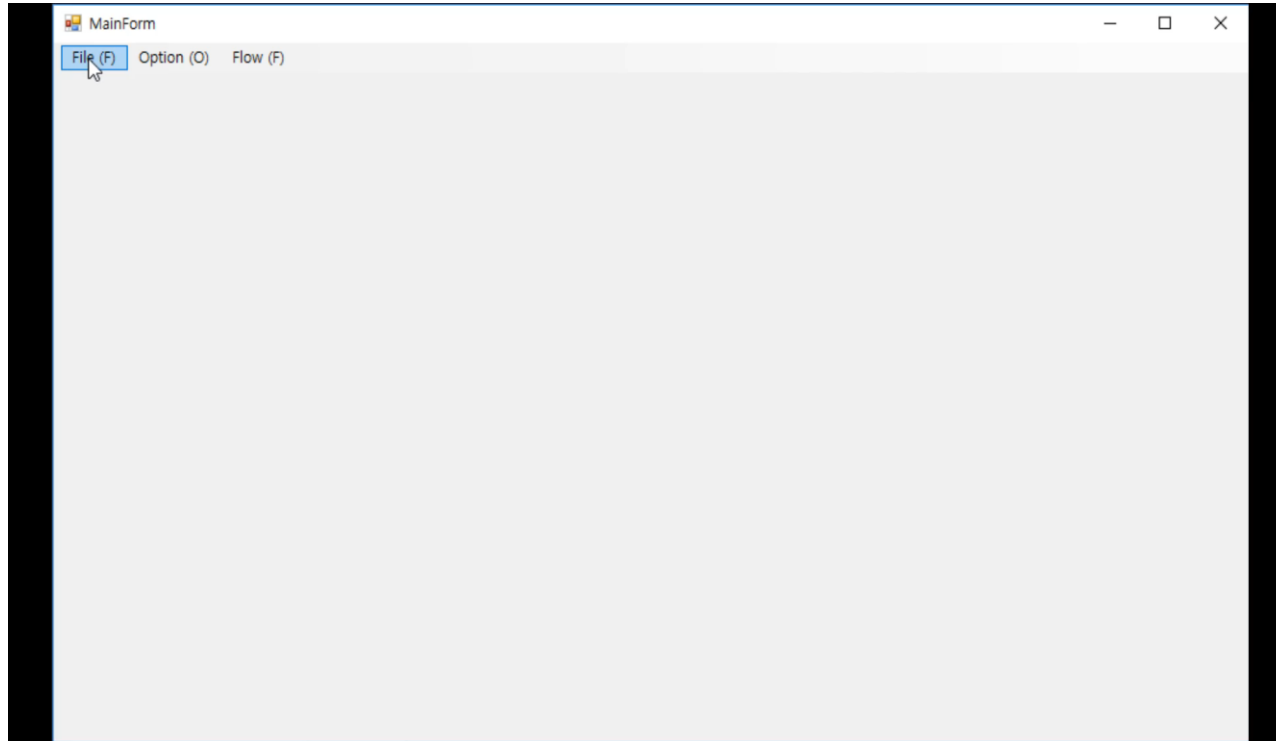<1:1>                    <Tournament>

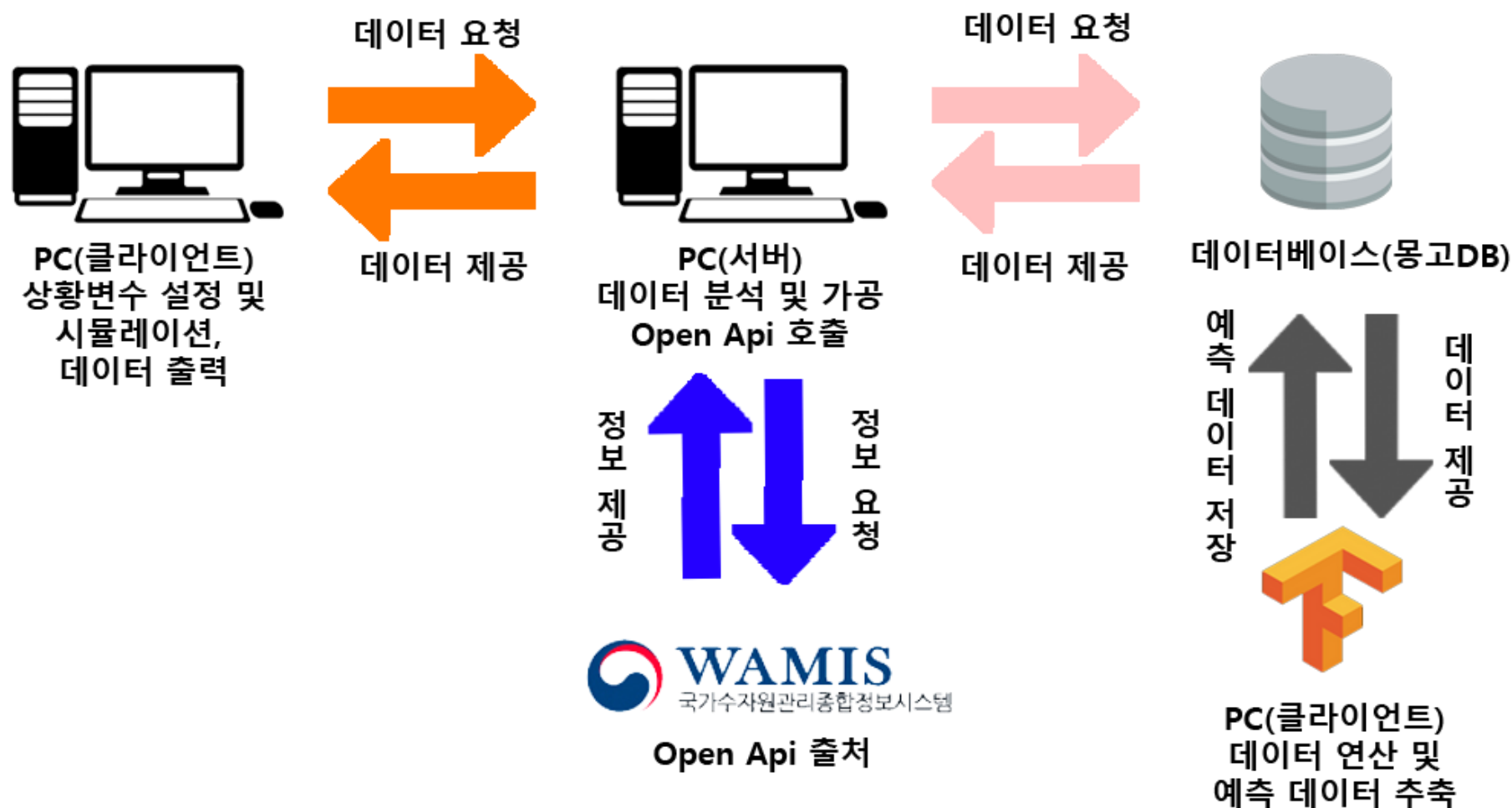# Neurophysiological Big Data Visualization Tool

# Neurophysiological Big Data Visualization Tool



**<Tool Options>**
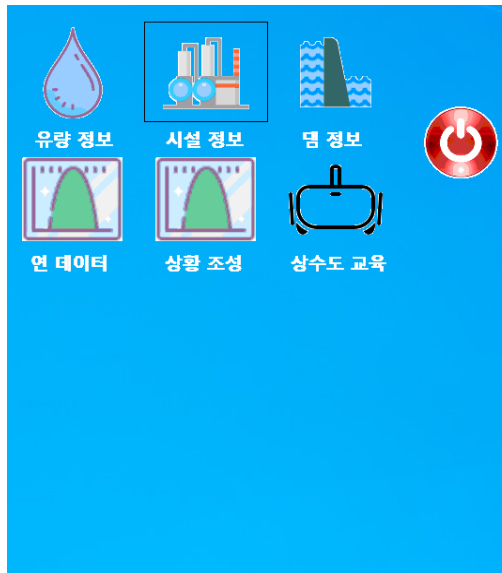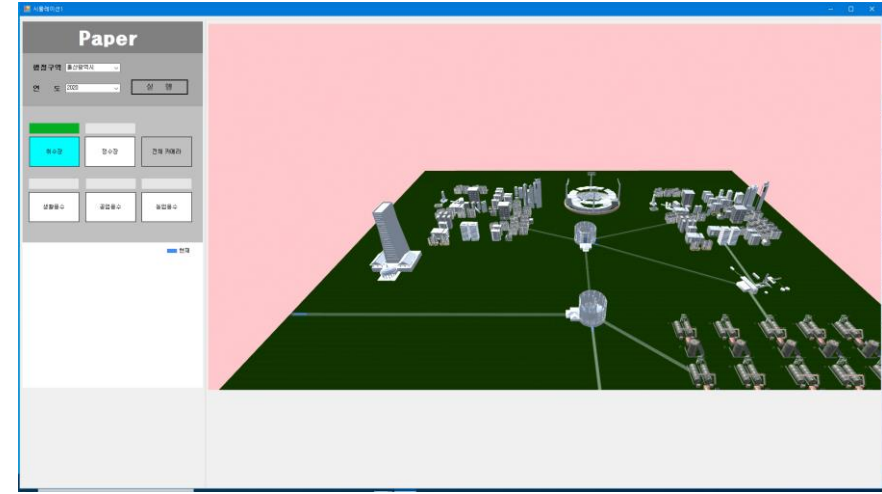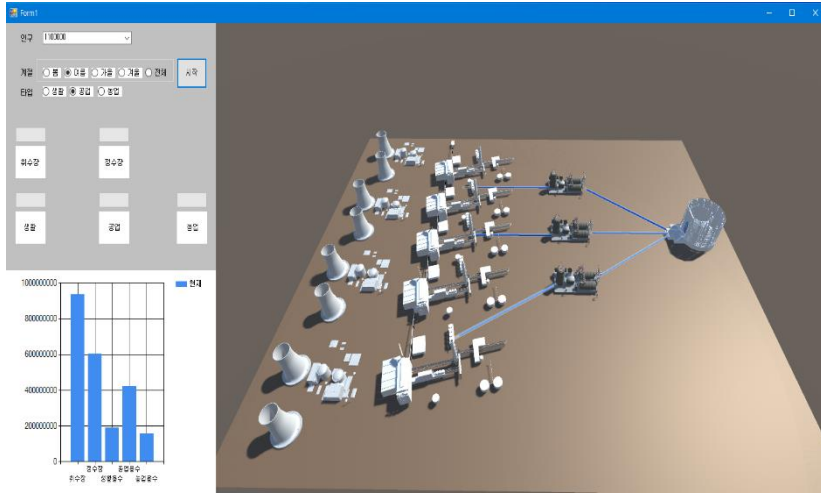
▶ Asynchronously parsing

▶ High-reaction speed

▶ Window sliding by using mouse dragging

▶ Scrolling
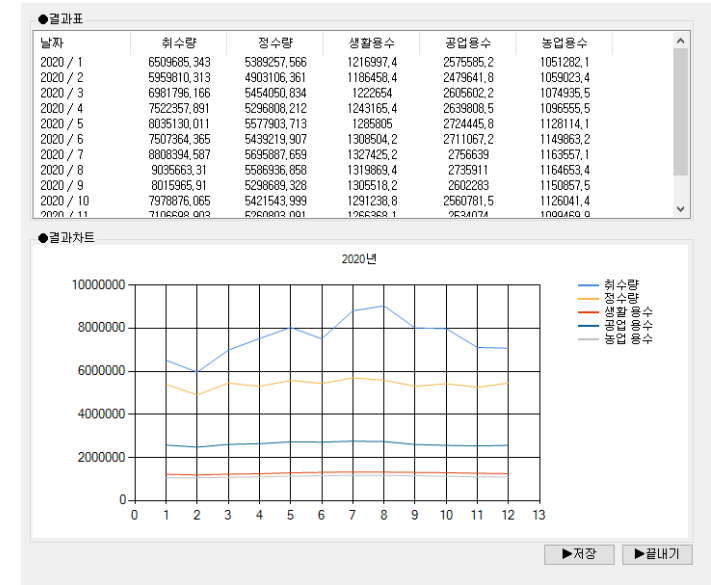
▶ Graph zoom, separate, integrate

# Waterworks Simulation



PC(클라이언트)
상황변수 설정 및
시뮬레이션,
데이터 출력

데이터 요청

데이터 제공

PC(서버)
데이터 분석 및 가공
Open Api 호출

데이터 요청

데이터 제공

데이터베이스(몽고DB)

예측 데이터 저장

데이터 제공

정보 제공

정보 요청

WAMIS
국가수자원관리종합정보시스템

Open Api 출처

PC(클라이언트)
데이터 연산 및
예측 데이터 추축

# Waterworks Simulation

# Home Alone



&lt;Demo video&gt;



&lt;Architecture&gt;

# Robot Simulation

For Security,
Block Robot design

## Robot Waist
axis1

## Robot Arms

| | Left | Right | axis line |
|---|---|---|---|
| axis1 | | | ☑ |
| axis2 | | | ☑ |
| axis3 | | | |
| axis4 | | | ☐ |
| axis5 | | | ☐ |
| axis6 | | | ☐ |
| axis7 | | | ☐ |

## View
○ X1   ○ X1.5   ○ X2   ● Free Mode

## Control Key
Vertical Rotation = Up, W, Down, S
Horizontal Rotation = Left, A, Right, D
Vertical camera move = Q(down), E(up)
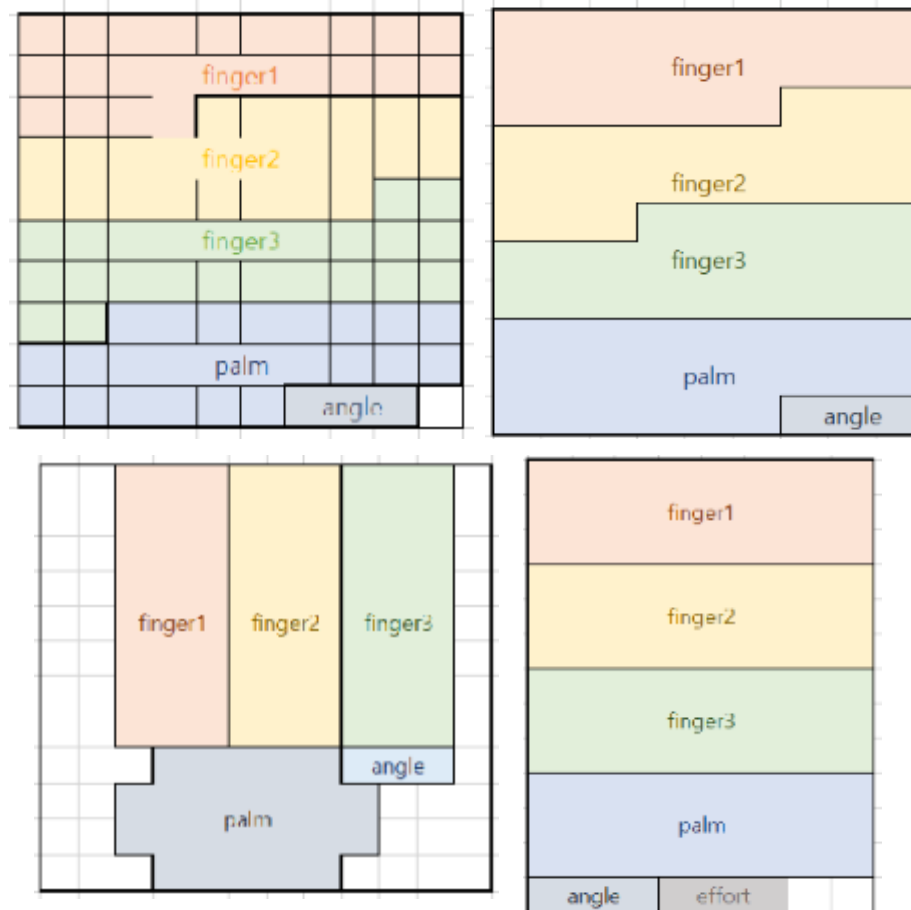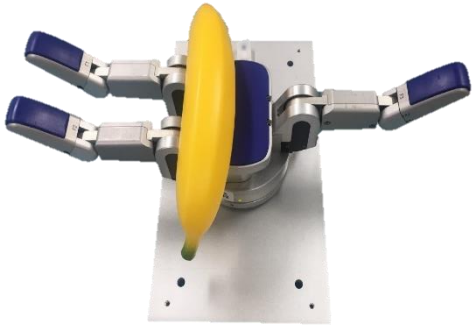Mouse wheel = Distance (when view mode is Free

## Amiro Controller
Connect    Status :

확인    취소

## <Simulation functions>

▶ Robot Viewer

▶ Various view

▶ Set angle value

▶ Connect with robot controller

# Object classification with tactile sensor



- Object Grasp by Robot Hand
- Collect Tactile Data (Tactile Image)
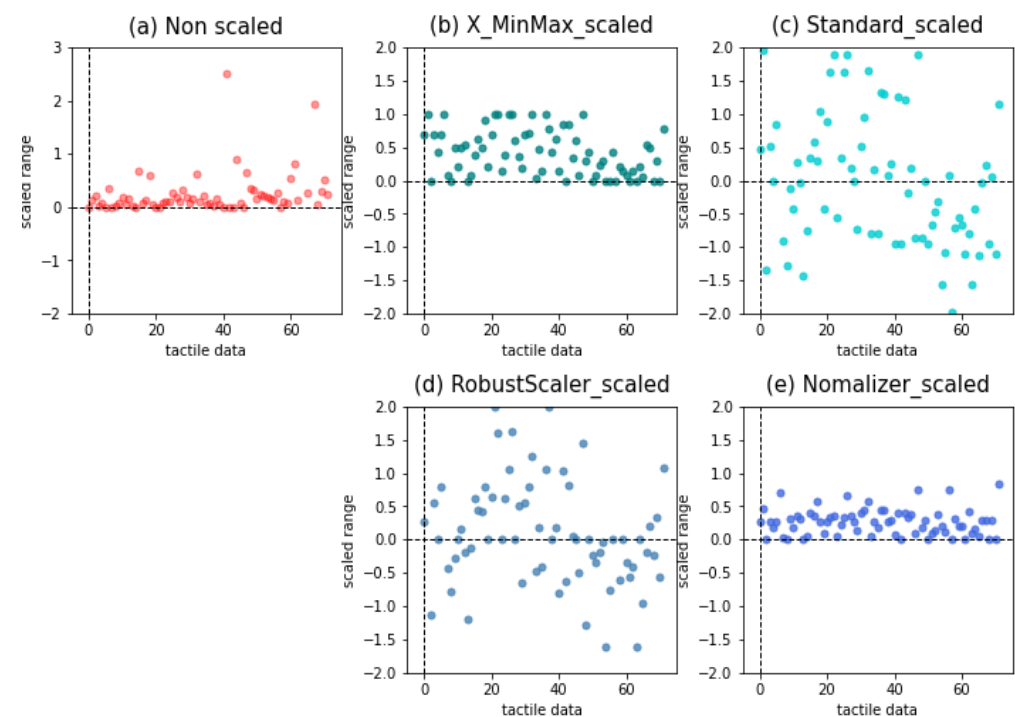- Feature Scaling (Pre-processing)
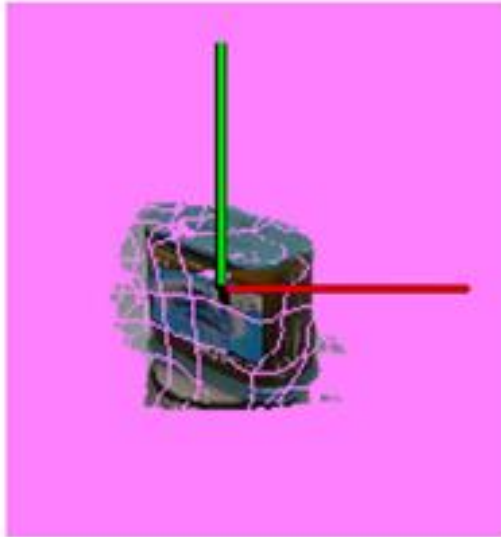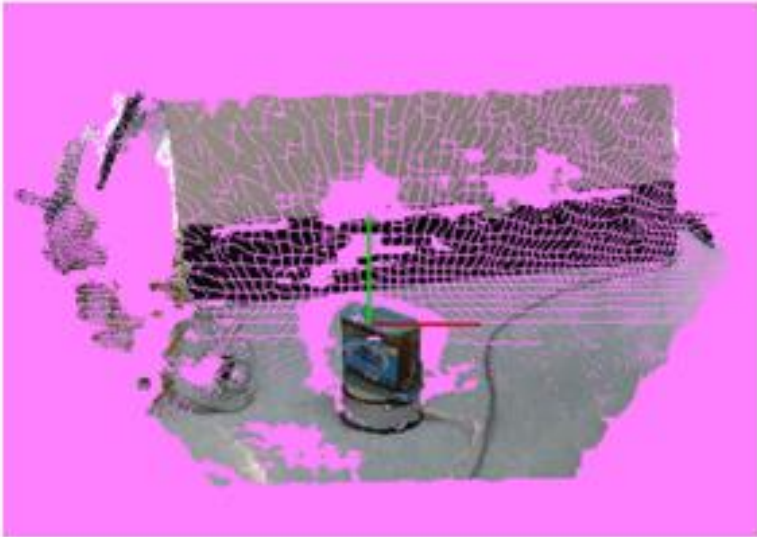- Learning & Model Making (CNN)
- Object Classification

# Object classification with tactile sensor



| | Finger | Hand | Angle | Effort |
|---|---|---|---|---|
| Standard | 91.17% | 83.25% | 87.08% | 82.08% |
| Min max | 91.17% | 85.08% | 90.17% | 86.75% |
| Robust | 81.92% | 82.83% | 83.67% | 87.25% |
| Normalize | 86.25% | 88.83% | 95.17% | 94.58% |

# Point cloud Edit Program



**<Edit functions>**
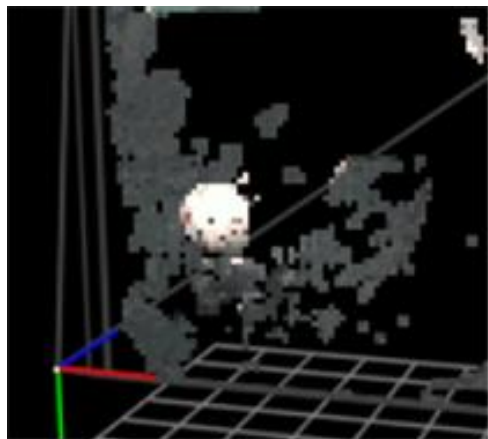
▶ .pcd / .ply file viewer

▶ File edit, cut data

▶ Object segmentation using kdtree

# Object classification based on point cloud data from rgb-d camera
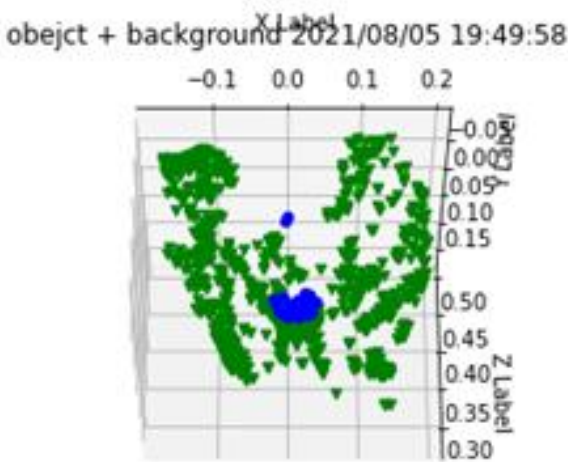

Object data capture


Original point cloud data


Classification results


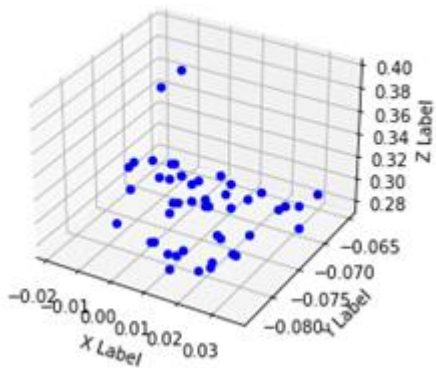Used objects


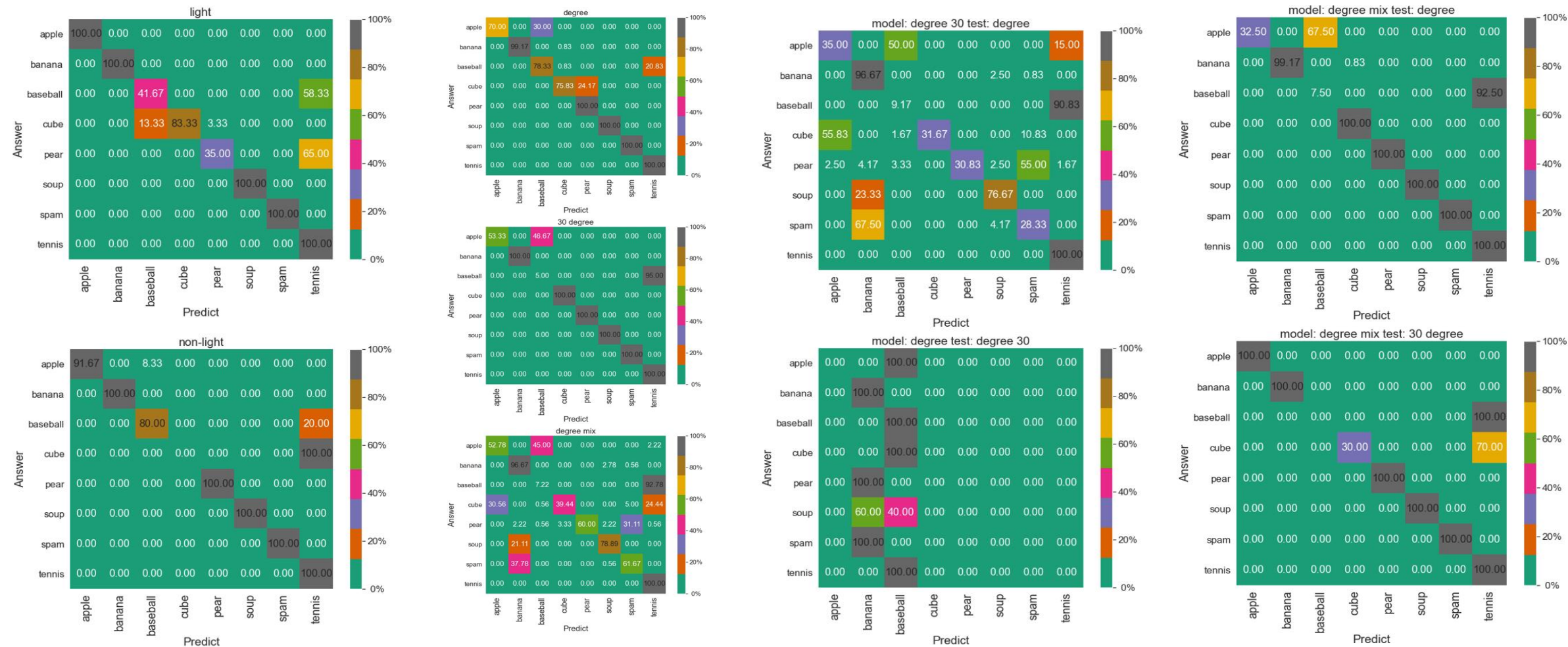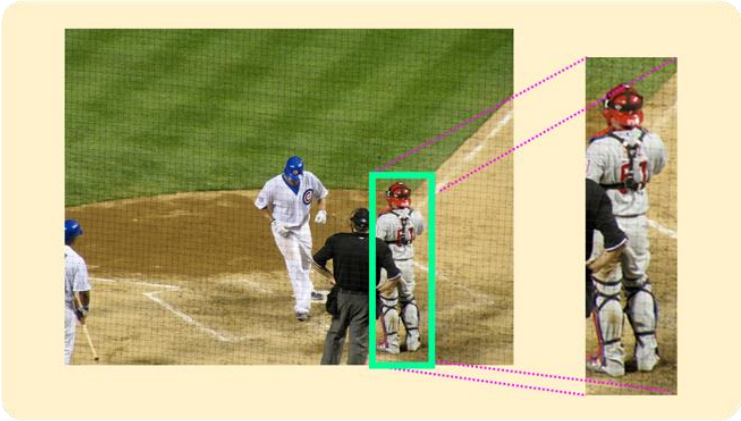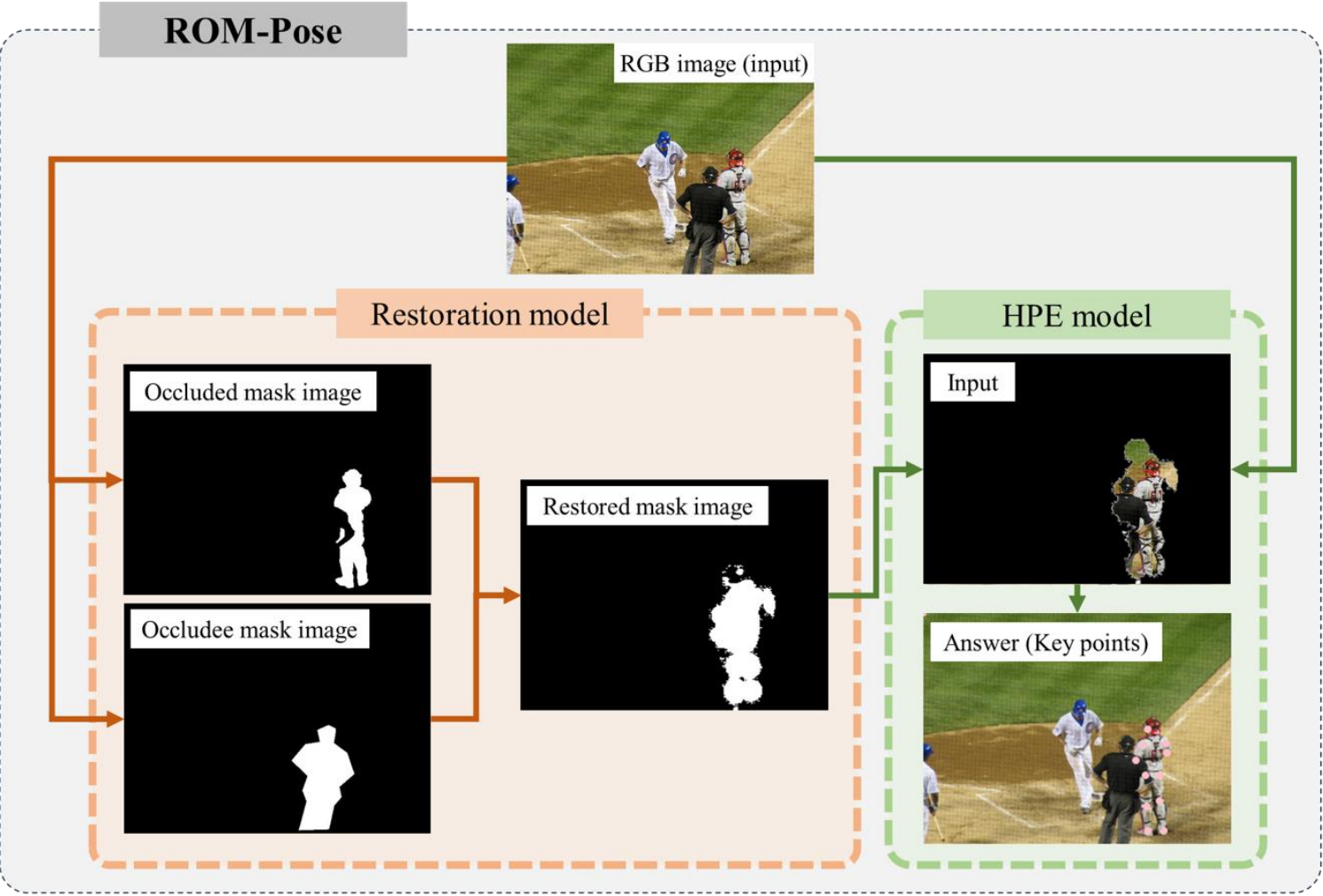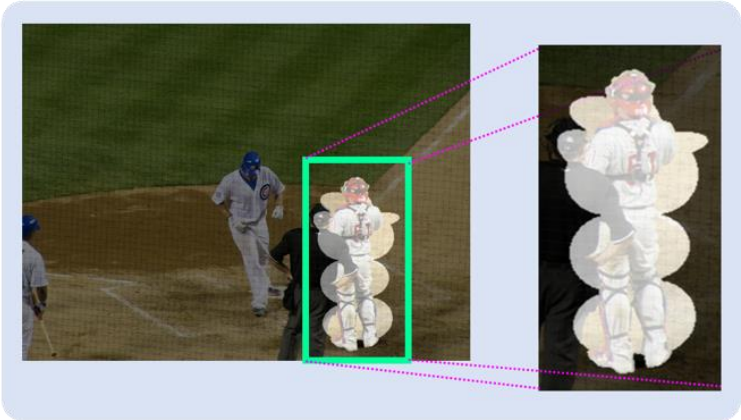Separation
object and background


Perception parts of object

# Object classification based on point cloud data from rgb-d camera

# Human Pose Estimation with restored occluded mask image

Thank You