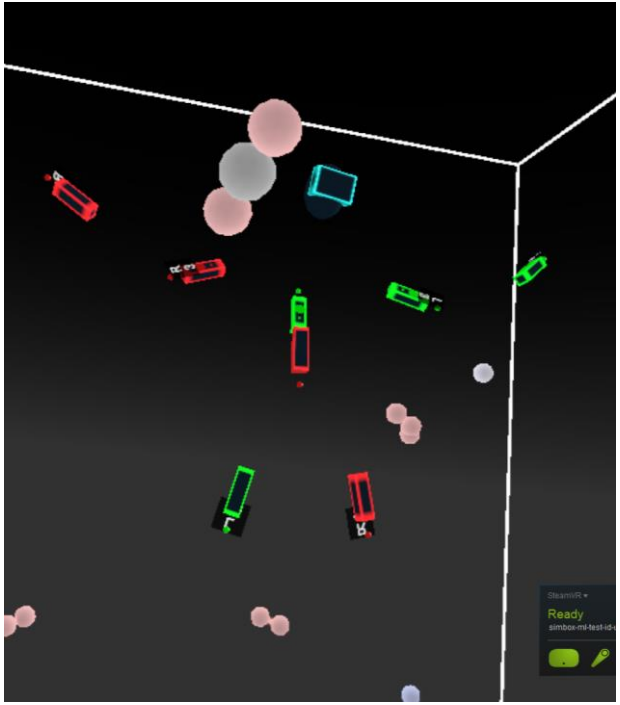
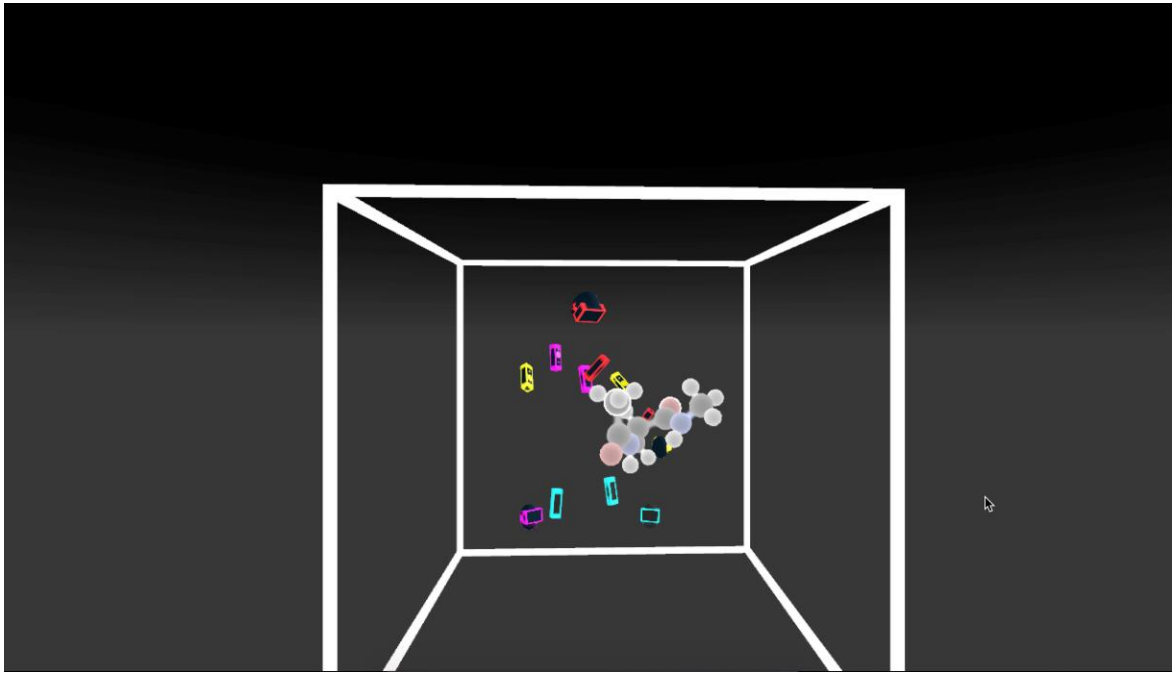
Motivation

- We have multi-user VR.
- Users can see each others headsets and controllers.
- We have a consistent coordinate system and good tracking.
- Can we predict whole body avatar from headset + controllers?



Data Collection





Data Collection

Data

- **Features**:
  - Position and orientation of headset, left controller and right controller.
- **Targets**:
  - Back
  - Front
  - Left elbow
  - Right elbow
  - Left knee
  - Right knee

Data Notes

- Controllers from several different machines.
- Identified through IP and left / right.
- These values are not always consistent!
- Each CSV is accompanied by JSON which provides the mapping.

Data format

Row – DateTime, MainPlayerID, LeftController XYZ, RightController XYZ, Headset XYZ, LeftControllerQuaternion, RightControllerQuaternion, HeadsetQuaternion, LeftElbow XYZ, ….

Units – XYZ in nm, Quaternion from Unity space.

Data will be noisy!

Complications

- Need to predict several 3D coordinates.
- A lot of targets – may need to simplify representation.
- Transformations - translation, rotation and scale.
- Noise – duct tape is not precise.
- Idea: Use a clustering algorithm to detect “poses” + classifier to predict?