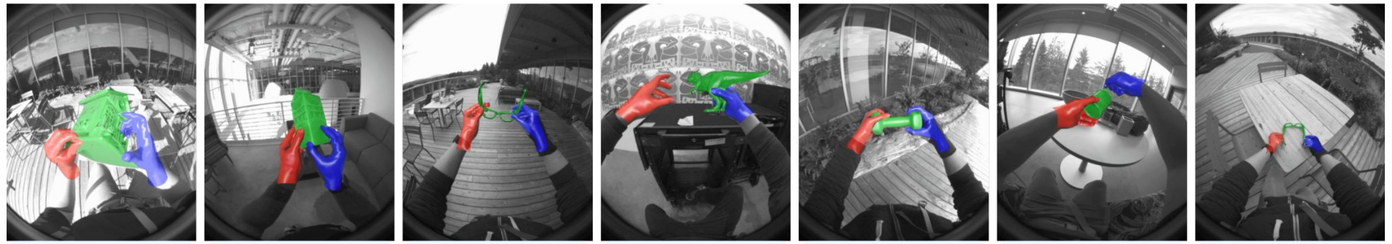
SHOW3D: Capturing Scenes of 3D Hands and Objects in the Wild

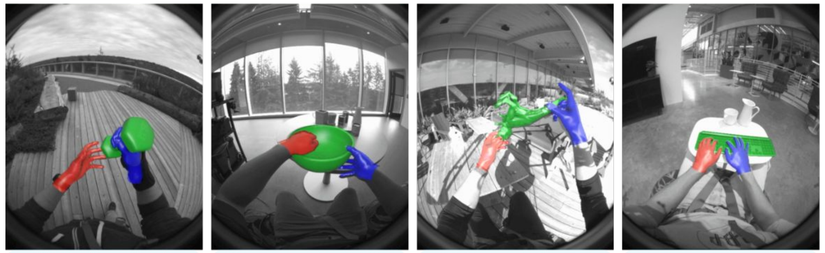
Patrick Rim[1,2], Kevin Harris[1], Braden Copple[1], Shangchen Han[1], Xu Xie[1], Ivan Shugurov[1], Sizhe An[1], He Wen[1], Alex Wong[2], Tomas Hodan[1], Kun He[1]

CVPR JUNE 3-7, 2026 DENVER COLORADO

[1] Meta [2] Yale



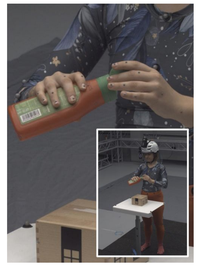
"Close the front door of the birdhouse toy…" "Find the price tag on the orange juice…" "Put on slowly the pair of Aria glasses…" "Scare the painting with the dinosaur toy…" "Curl with both hands the dumbbell…" "Open away from you the soup can…" "Place on the front table your Aria glasses…"

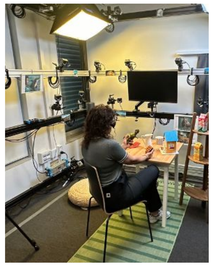


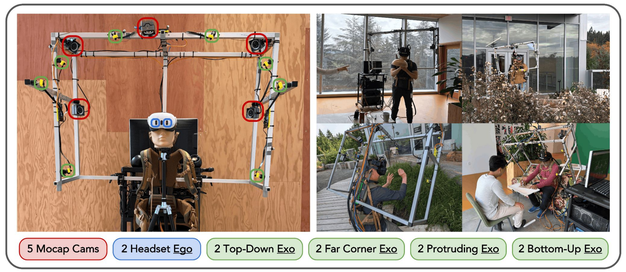
"Shake like a bottle the dumbbell…" "Scoop out the food in the wooden bowl…" "Fidget and play with the dinosaur toy…" "Type a quick message on the keyboard…"

#	Training set	Test set	MKPE (mm) ↓
1	UmeTrack	SHOW3D	22.2 (+55%)
2	HOT3D	SHOW3D	19.6 (+37%)
3	UmeTrack + HOT3D	SHOW3D	16.4 (+15%)
4	SHOW3D	SHOW3D	15.5 (+8%)
5	UmeTrack + HOT3D + SHOW3D	SHOW3D	**14.3**
6	HOT3D	HOT3D	14.0 (+14%)
7	UmeTrack + HOT3D	HOT3D	12.7 (+3%)
8	UmeTrack + HOT3D + SHOW3D	HOT3D	**12.3**
9	UmeTrack	UmeTrack	9.7 (+2%)
10	UmeTrack + HOT3D	UmeTrack	**9.5**
11	UmeTrack + HOT3D + SHOW3D	UmeTrack	9.6 (+1%)

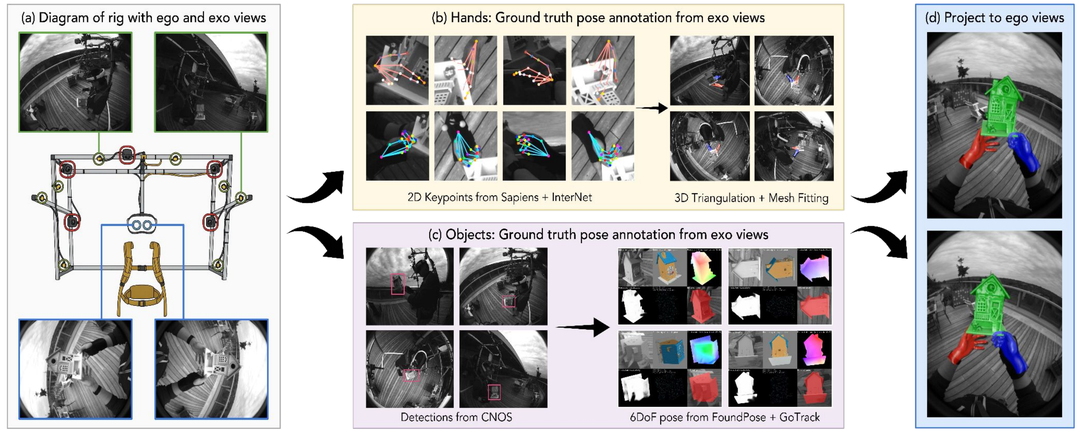
The most valuable **4.6 million frames** of egocentric hand and object pose data ever captured. **Open-sourced** for the community. 🚀







Our **mobile multi-camera rig** is the **first** setup for recording and automatically generating 3D annotations for HOI **in the wild**. 🔥



SHOW3D includes 3D hand 👋 poses, MANO meshes, 6DoF object 🥣 poses, and descriptive text captions.

Reference	Category	MPJPE (mm) Median↓	MPJPE (mm) P90↓
Dome	No interactions	6.28	7.31
	Hand–hand interaction	7.46	8.95
	Hand–object interaction	7.90	12.53
Manual (in the wild)	No interactions	5.65	12.35
	Hand–hand interaction	6.03	14.63
	Hand–object interaction	6.36	16.48

Sub-centimeter GT accuracy (for hand **and** object poses) vs. gold standard references. 🎯