

ROOM8

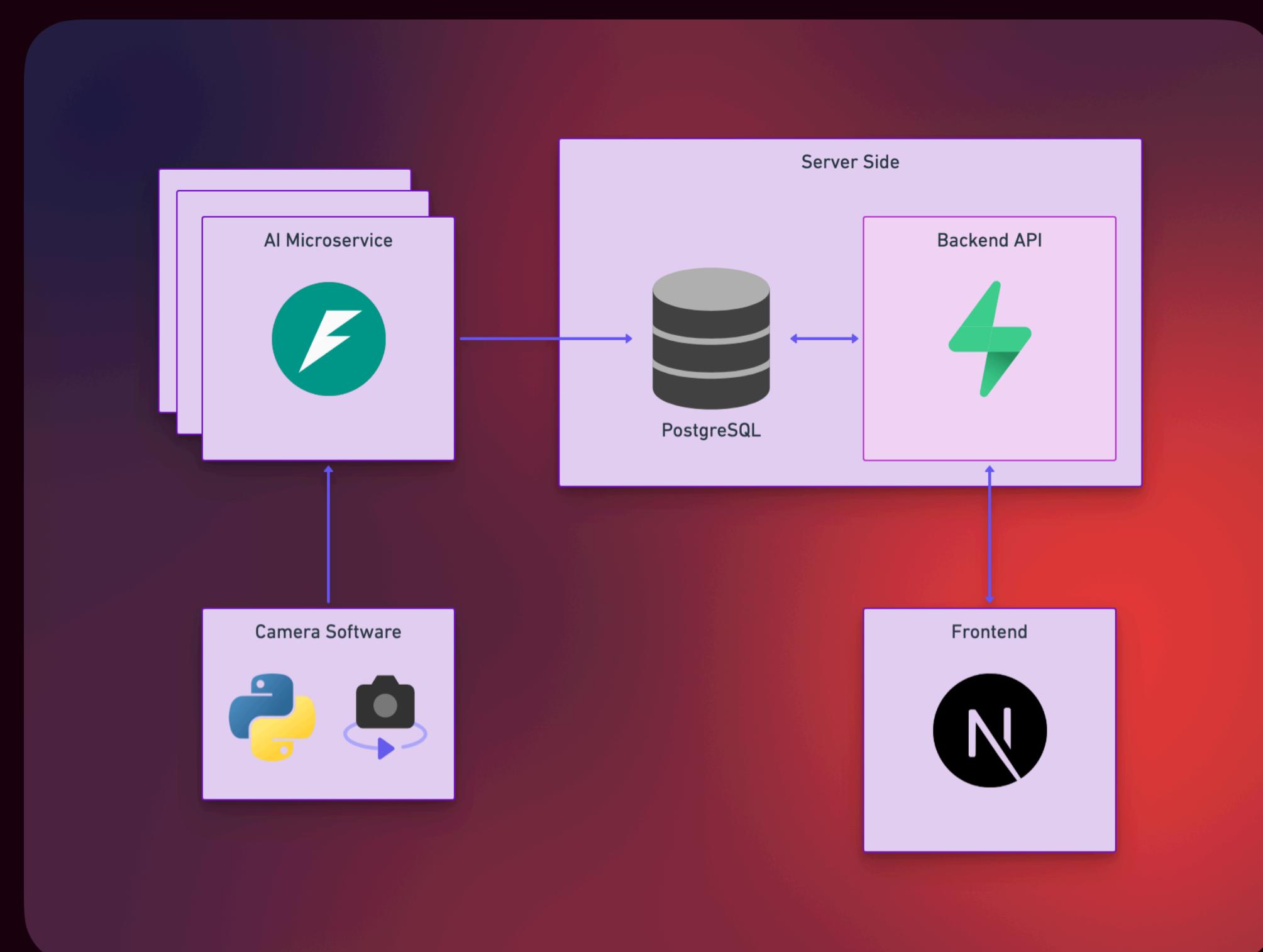


Motivation

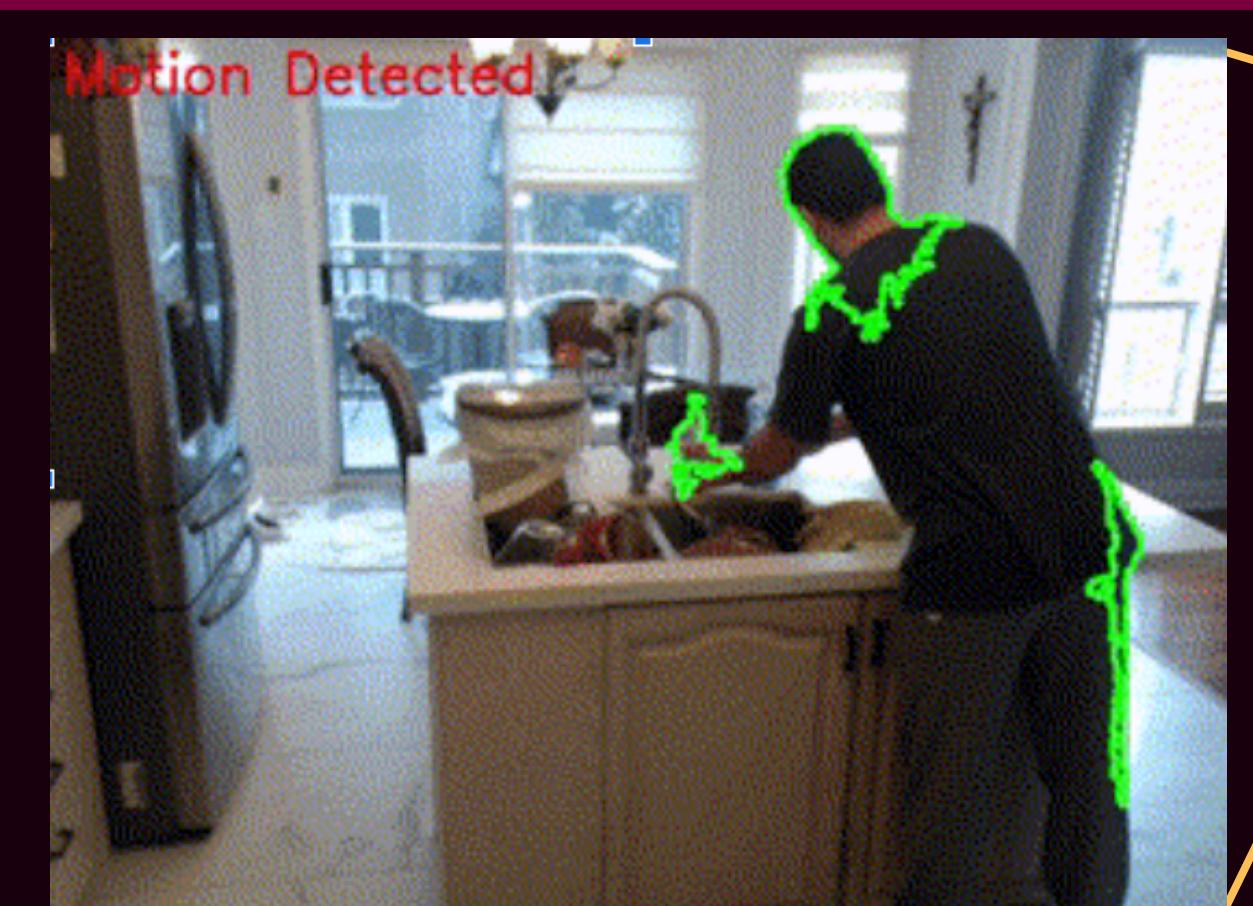
"17% of students report that roommate relationship and difficulties impact their academics" - CICMH

Living with other people can be stressful. From sharing expenses, keeping shared spaces cleaning, and scheduling chores. Disagreements in the home can often lead to conflict and even impact students' academic performance.

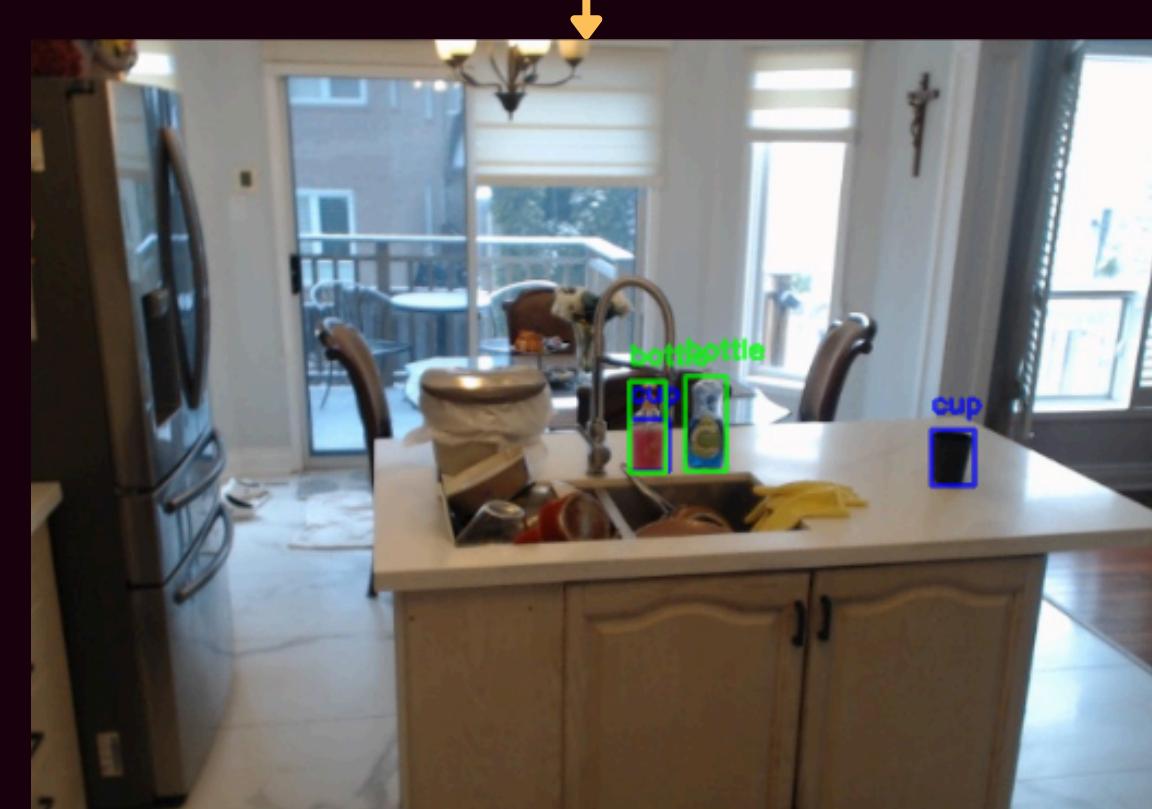
Design Overview



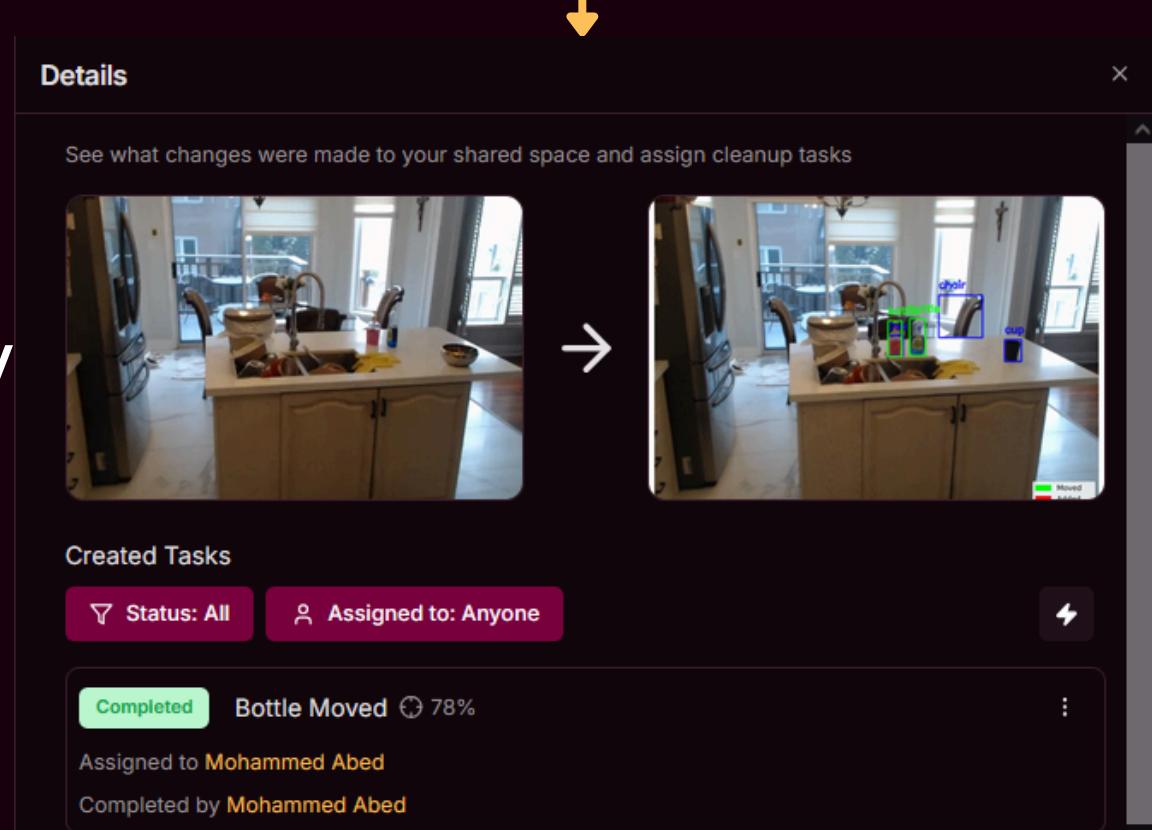
A camera setup in the shared space detects motion and captures a before and after picture.



The images are then uploaded to the AI detection micro-service, which then detects changes in the environment.



The changes are finally uploaded, where users can say what they'd like cleaned up

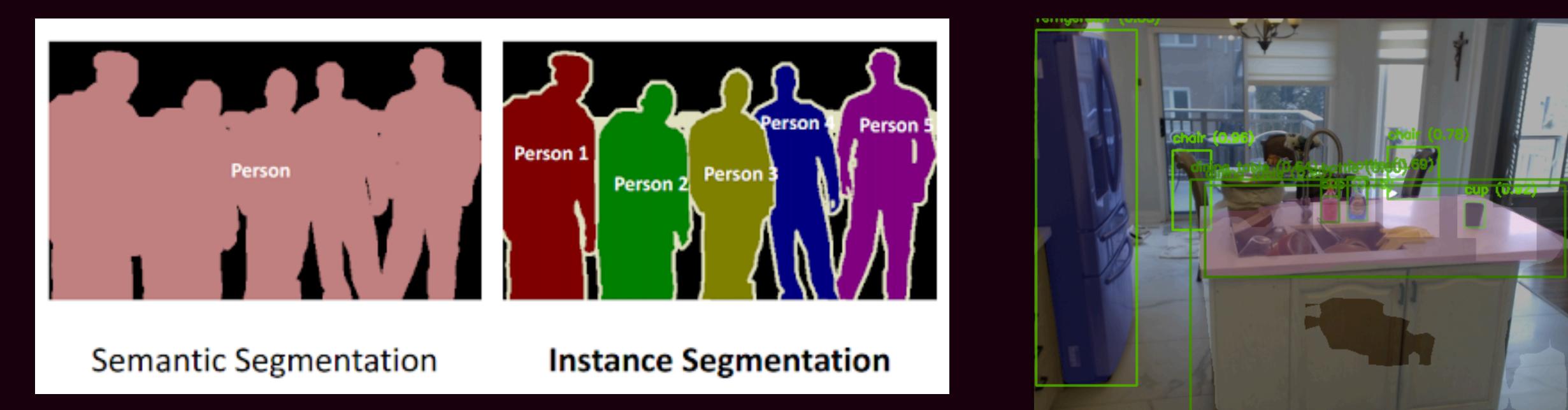


AI Overview

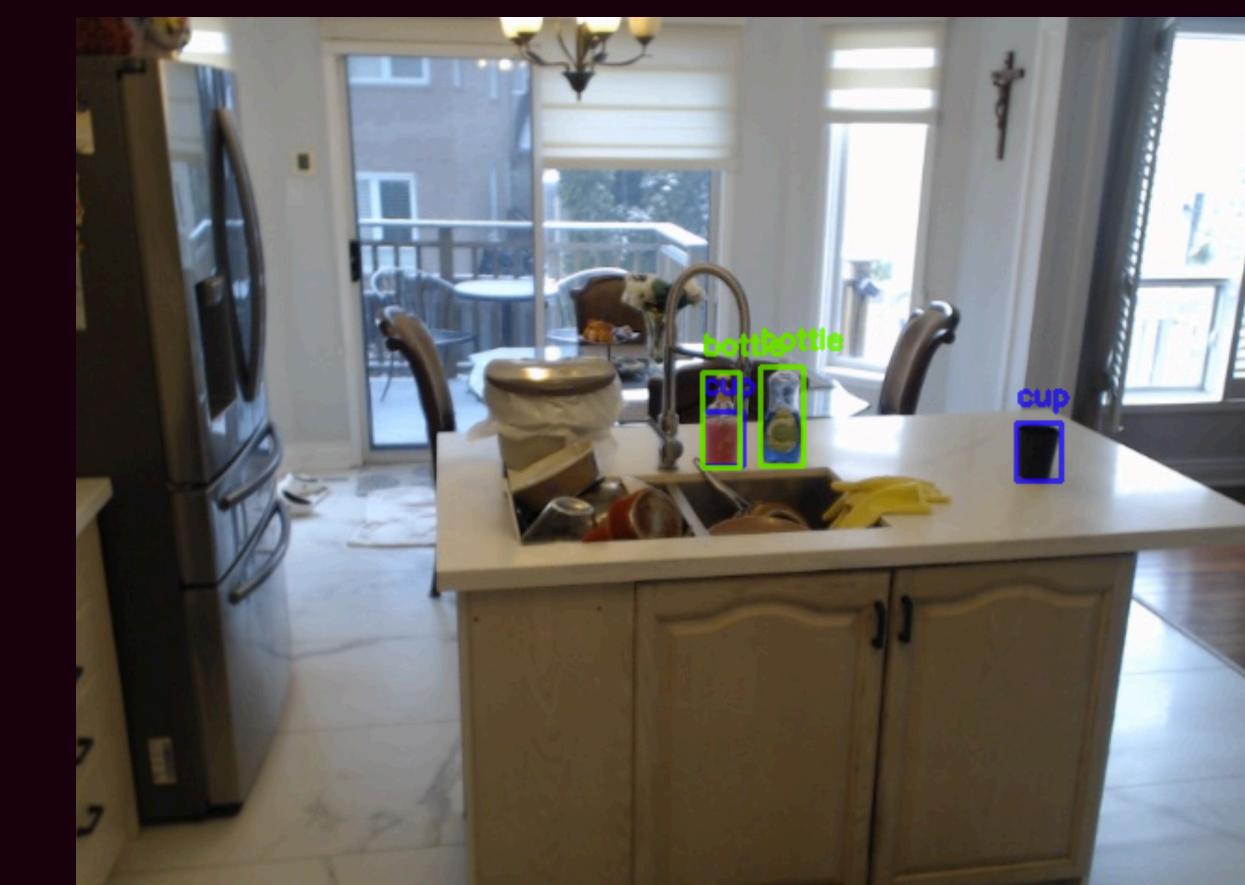
Frame differencing for background subtraction



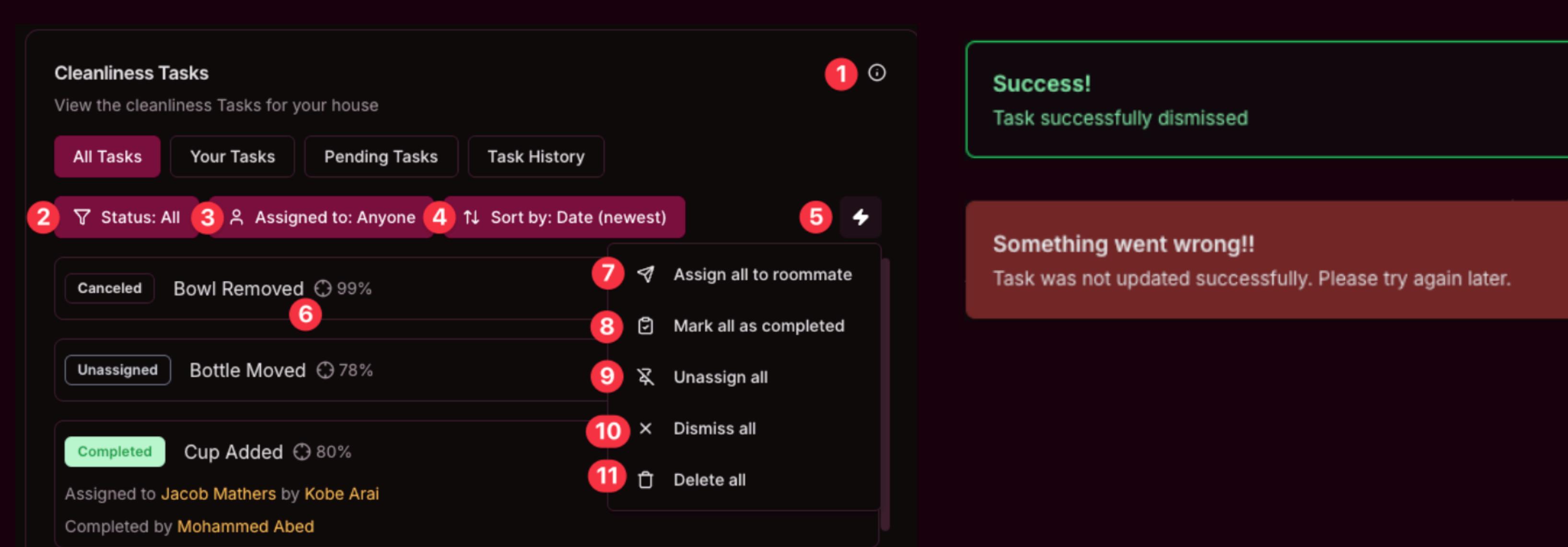
Instance Segmentation using Meta's Detectron2 object detector



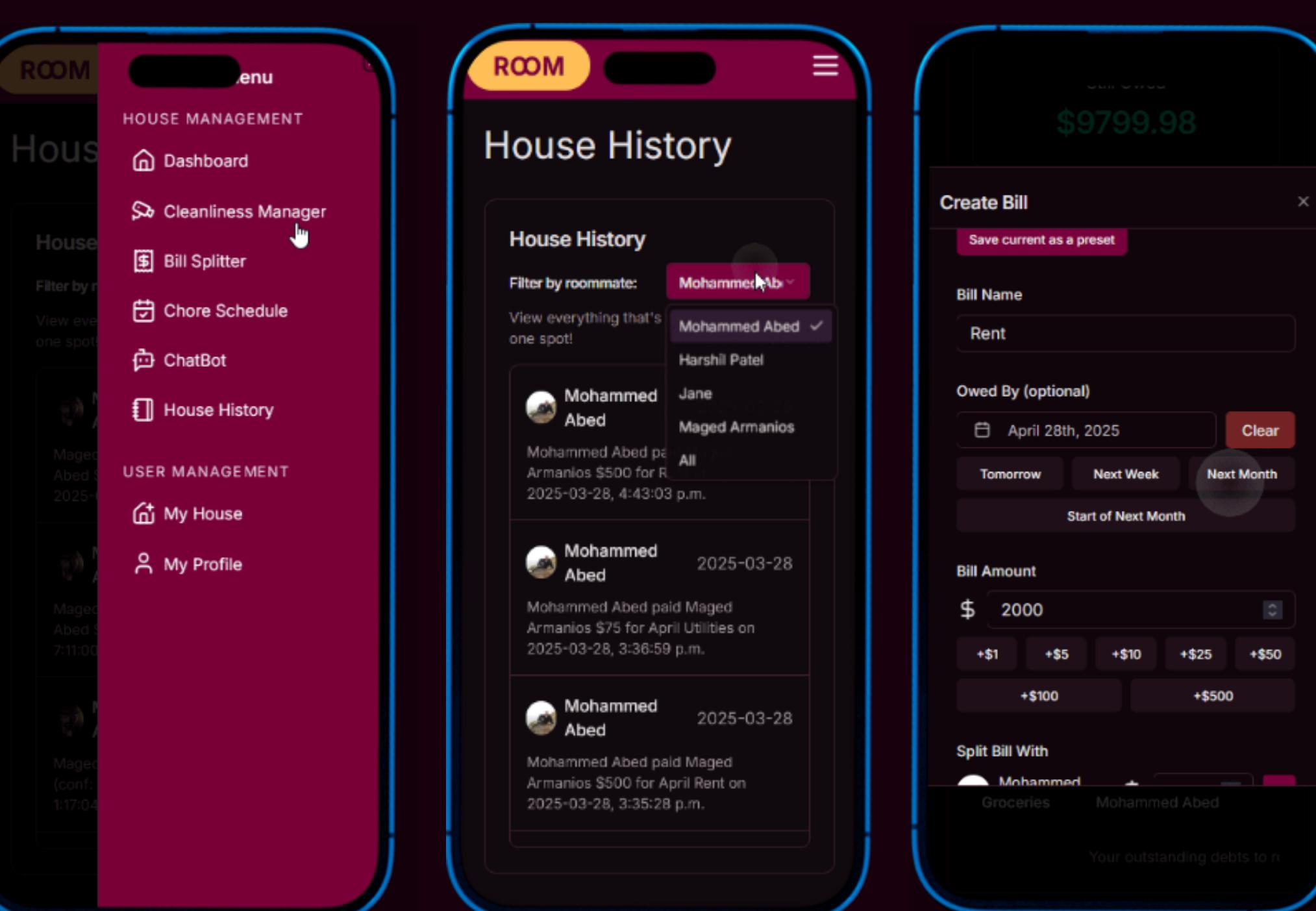
Algorithm to isolate changes between before and after image ⇒



Key Features



Mobile Responsiveness



Achievements

Successfully delivered 3+ relevant features for shared living according to user surveys

Minimal false positives / negatives in the AI detection algorithm (All Test Cases Passed!)

Privacy Focused
User is never captured & all data is encrypted in transit and store

Overwhelmingly Positive Feedback
96% of users rated the app at least a 4/5 for usability