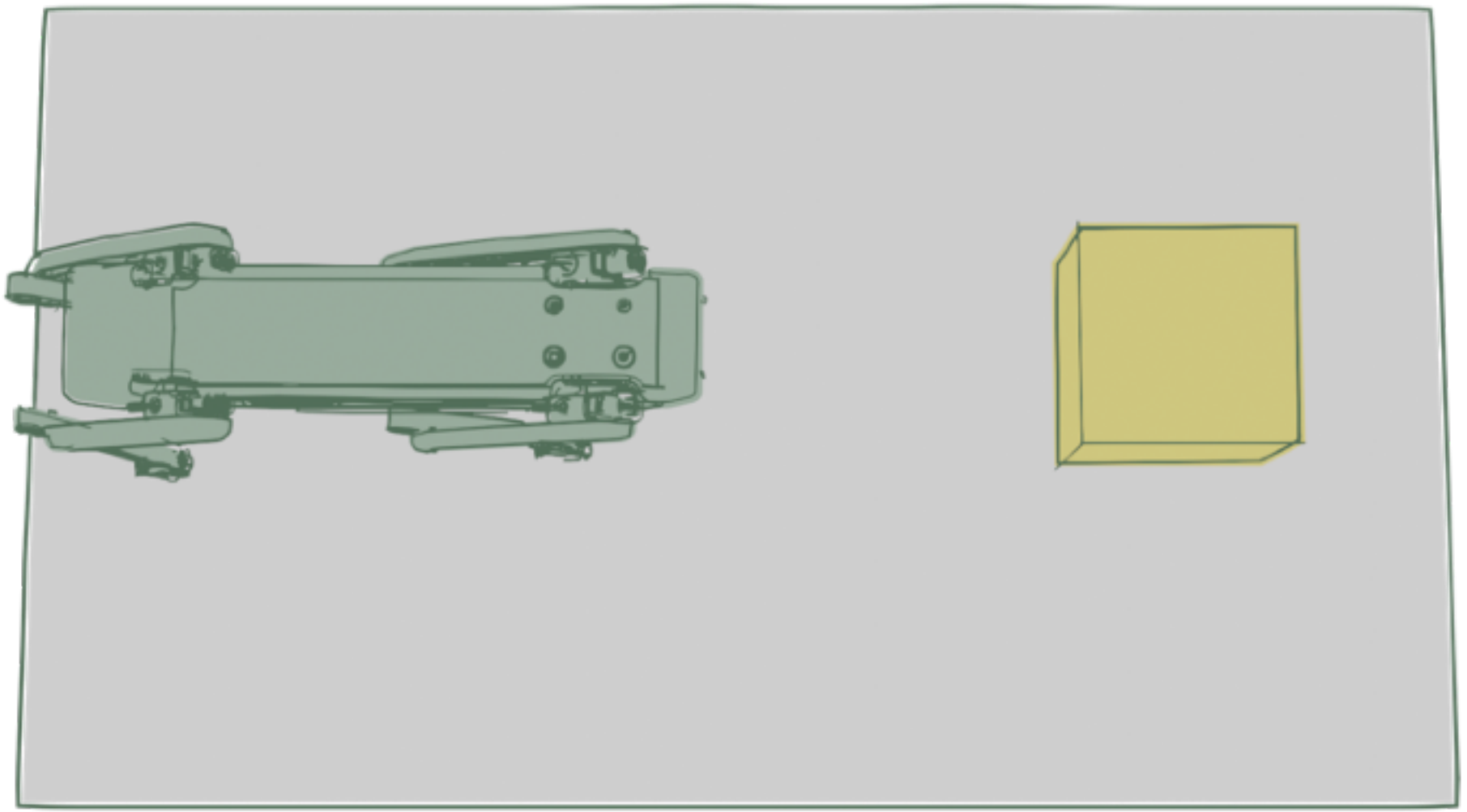


Tactile sensing

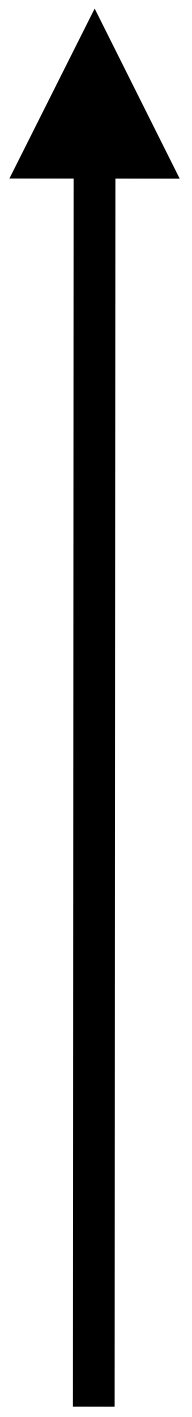
Mapping

Visual sensing

The Big Picture

Semantic Segmentation

Spacial Projection

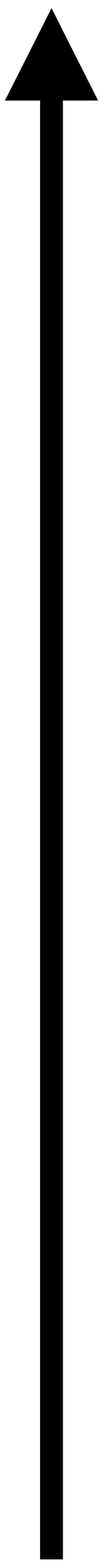


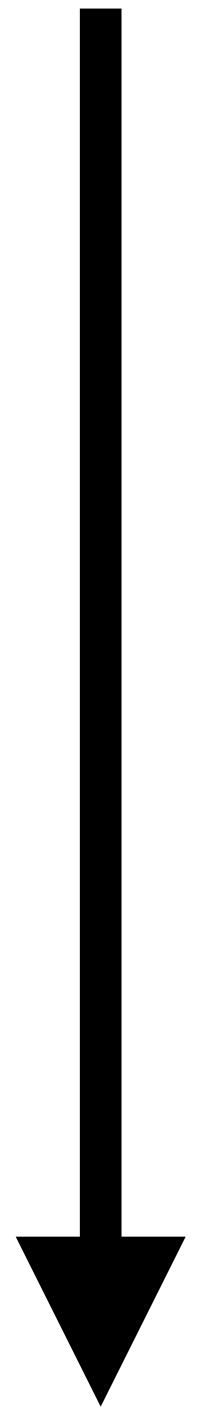
Semantic Prediction

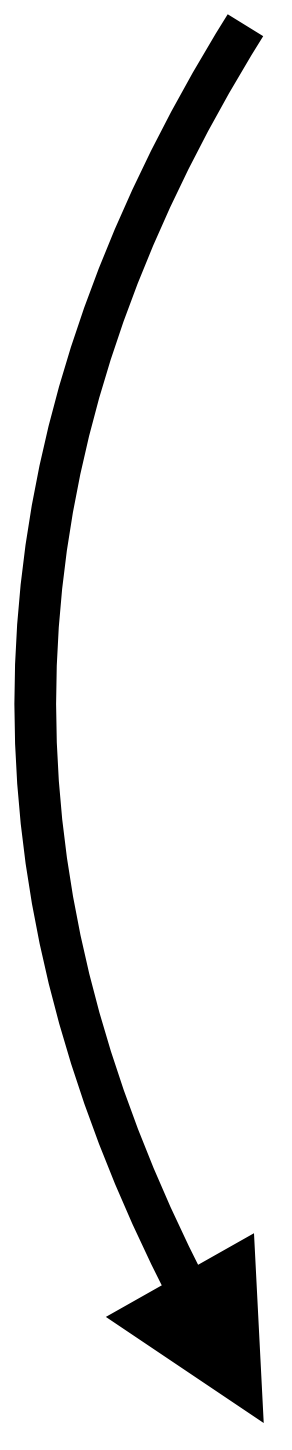
Physical Estimation

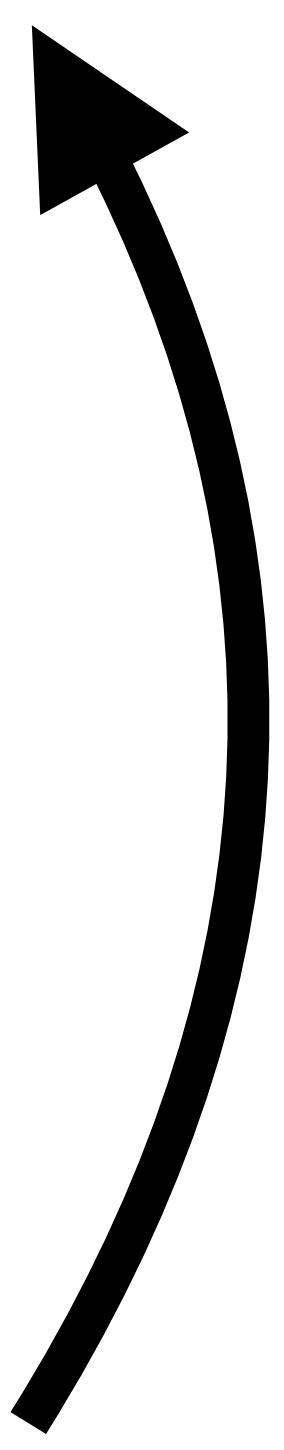
Physical Measurement

Measurement Dataset









Thm 1.
(Conjugate prior)

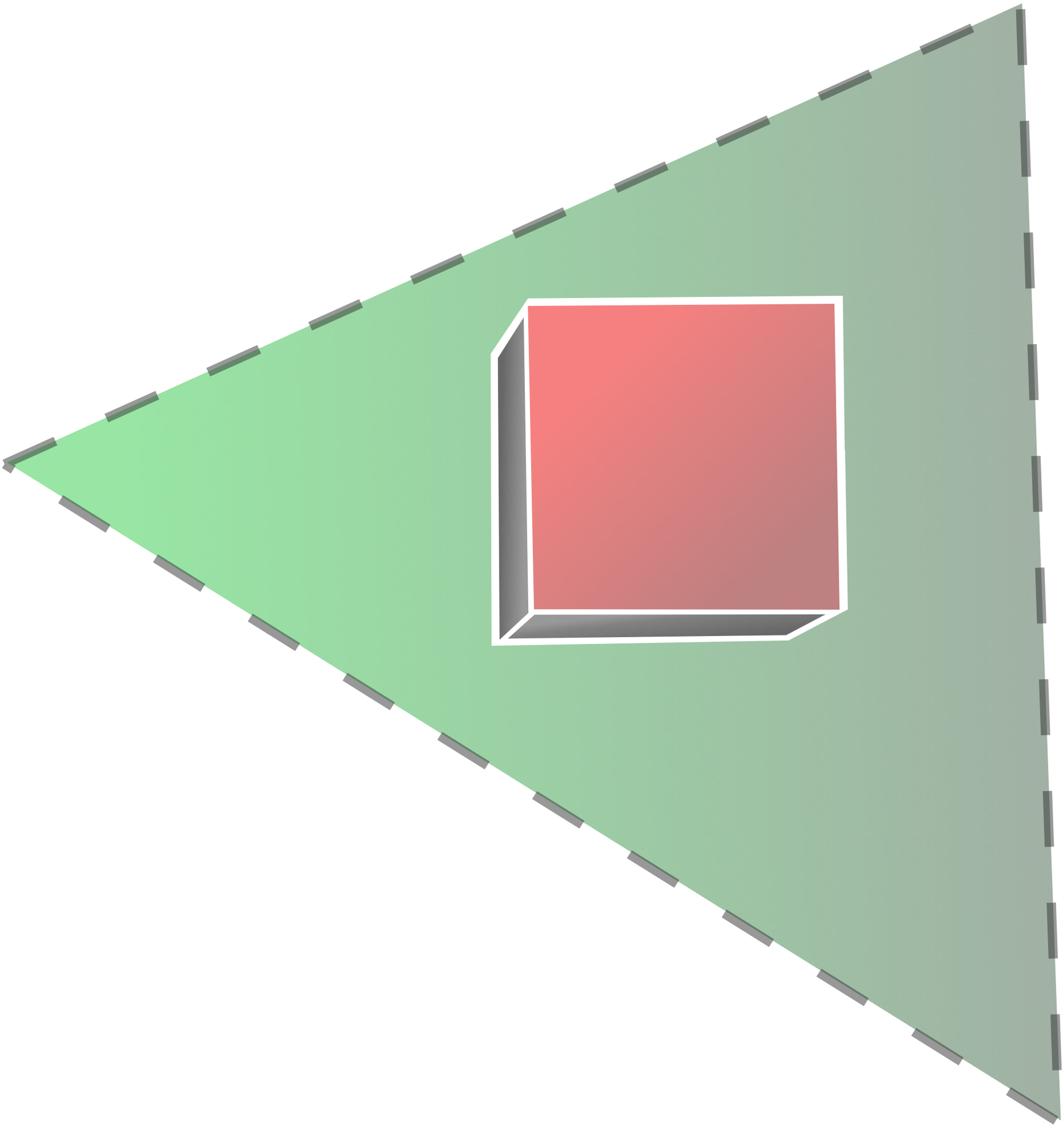
Thm 3.
(Moments)

init with default friction table

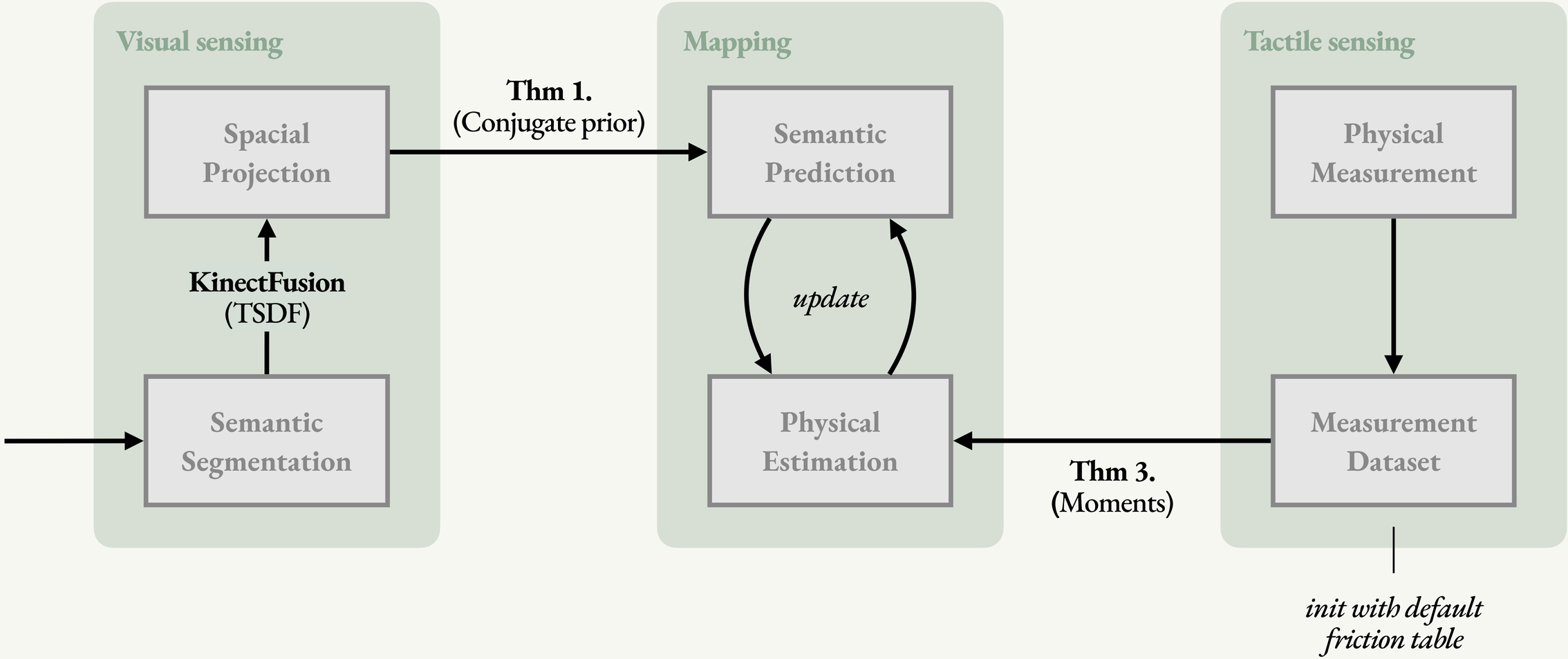
update

KinectFusion

(TSDF)



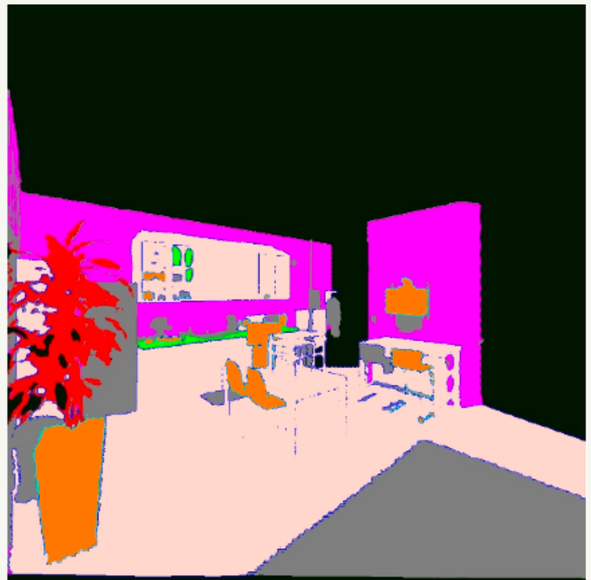
The Big Picture



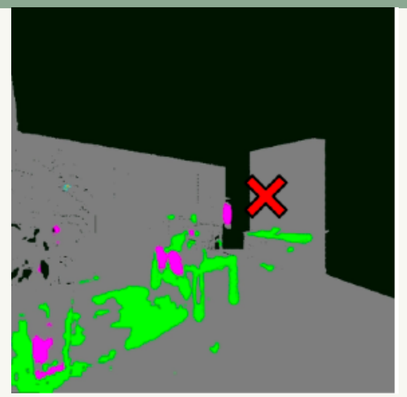
Semantic label is corrected on contact

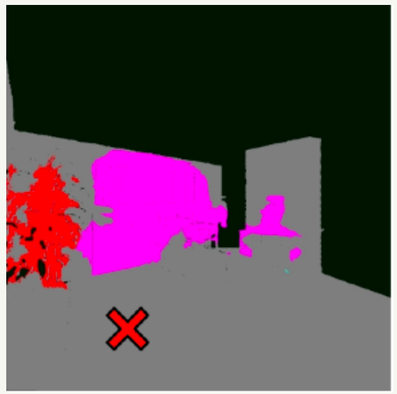
Scene

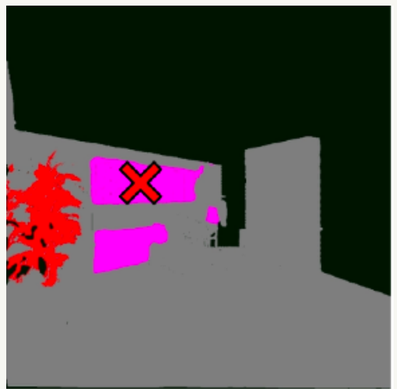
Semantic ground truth



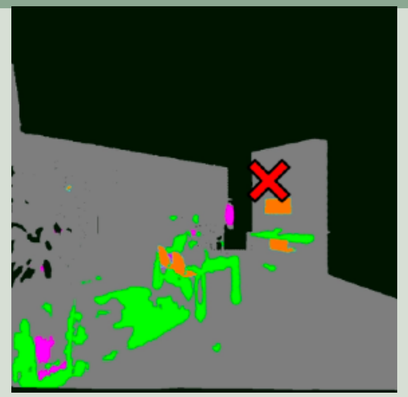
Selmap (Baseline)

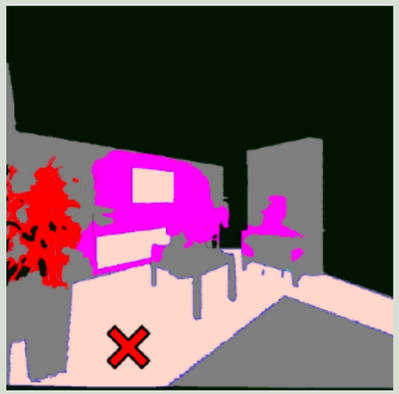






Proposed





Dense Material Dataset Segmentation Network

BERT Image Transformer

OneFormer

Tactile measurement