(a) CNN segmentation mask estimation

(i) Hologram transform applied
(ii) Propagate to \( \{z_1 \ldots z_N\} \)
(iii) Break into smaller images

No particles in focus

Particle is in focus

Manually label patches for “in focus” particles

Evaluating masks and “in focus” labels

(b) Training and Hyperparameter Optimization

(i) Hologram transform applied
(ii) Propagate to \( \{z_1 \ldots z_N\} \)
(iii) Break into smaller images
(iv) Tile transform applied

(v) Select patches*

(vi) Reassemble

(vii) CNN

“In focus” particle present?

(c) Operation/Test Evaluation

(i) Hologram transform applied
(ii) Propagate to \( \{z_1 \ldots z_N\} \)
(iii) Break into smaller images
(iv) Tile transform applied

(v) CNN

(x) Accuracy, F1 score, RMSE, other metrics

*patches are selected for manual labeling based on initial discrepancy between the CNN and HoloSuite

HOLODEC/synthetic holograms

Accuracy, F1 score, RMSE, other metrics