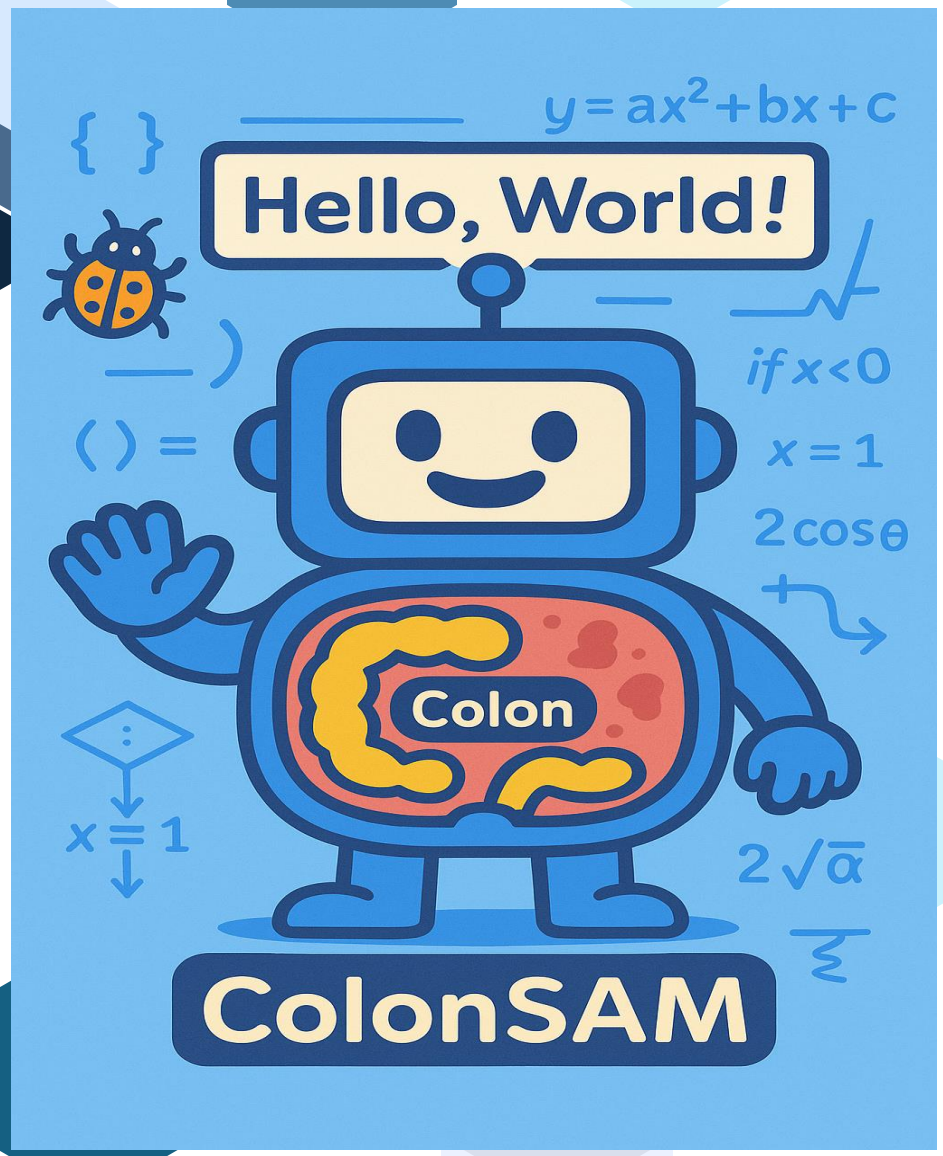
CRCV REU 2025

Week 8

Mentor: Dr. Tian
Student: Syn Nguyen



ColonSAM

Goal:

Develop prompt free model to segment polyps (other organs)

Why:

Colorectal cancer survival rate: 91% (stage I and II), 13% (stage IV)

Contribution:

SOTA, light-weight prompt-free segmentation model

2

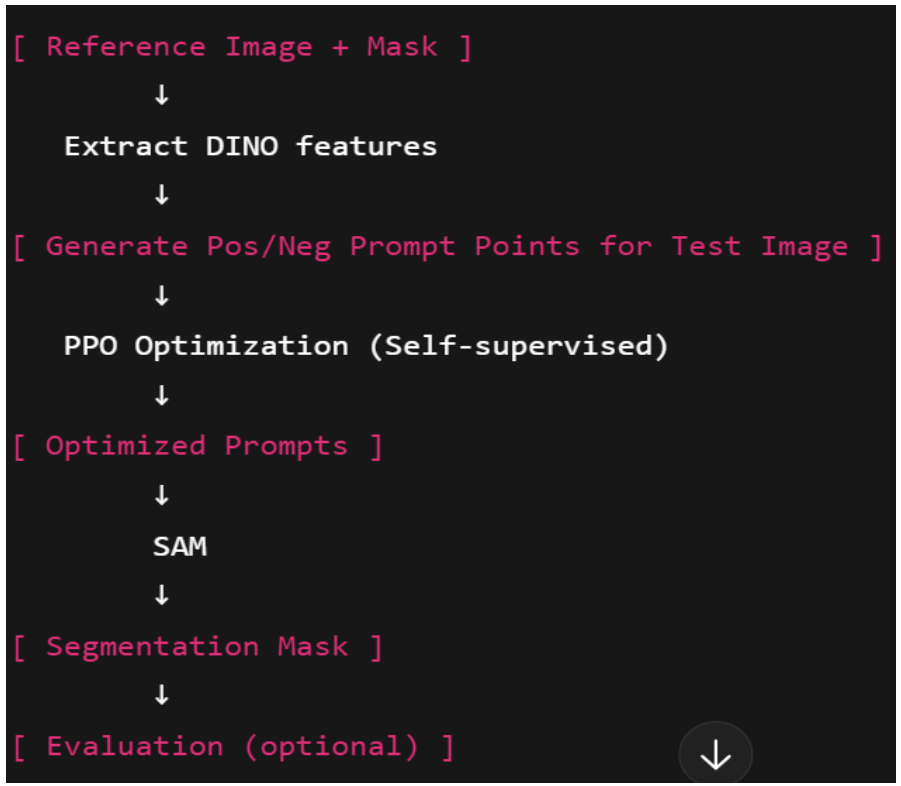
Completed

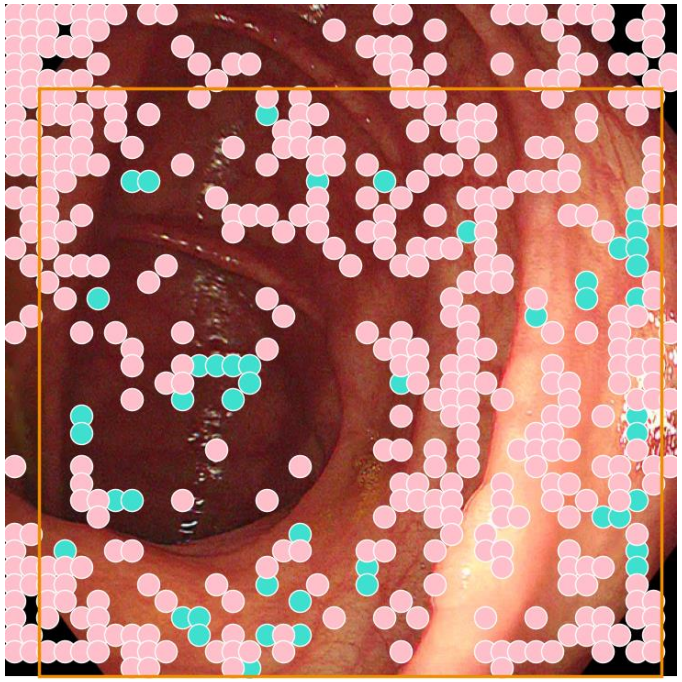


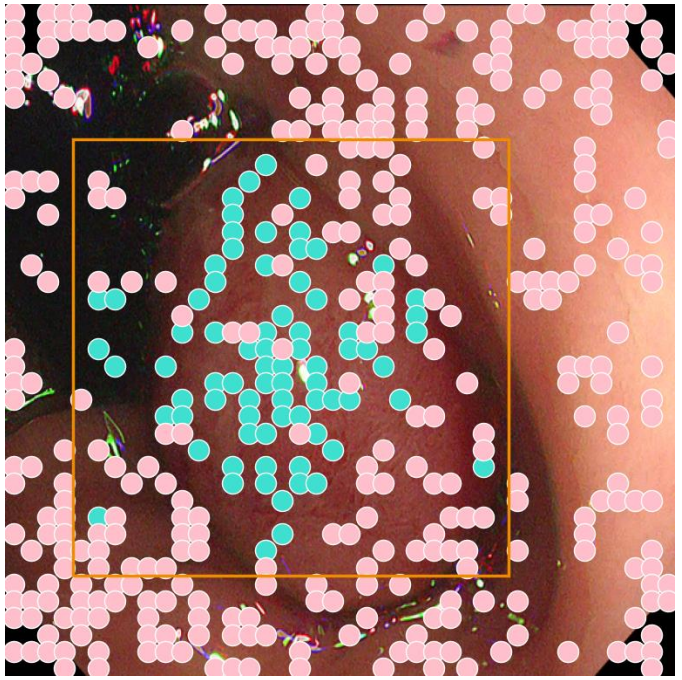
What have been done

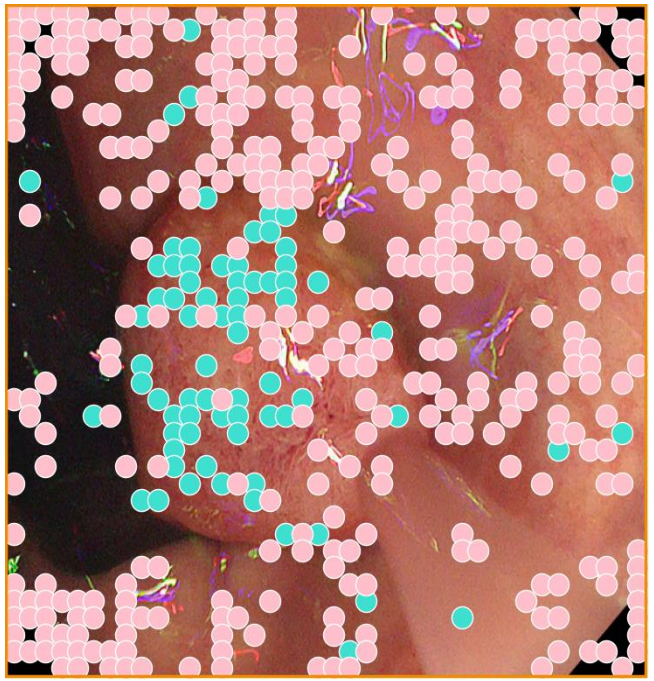
- Finetuned Yolov8 (Aborted)
- Successfully fill in the missing code:
  - https://github.com/XueyuLiu/PPO
- Adapt MedSAM to the codespace

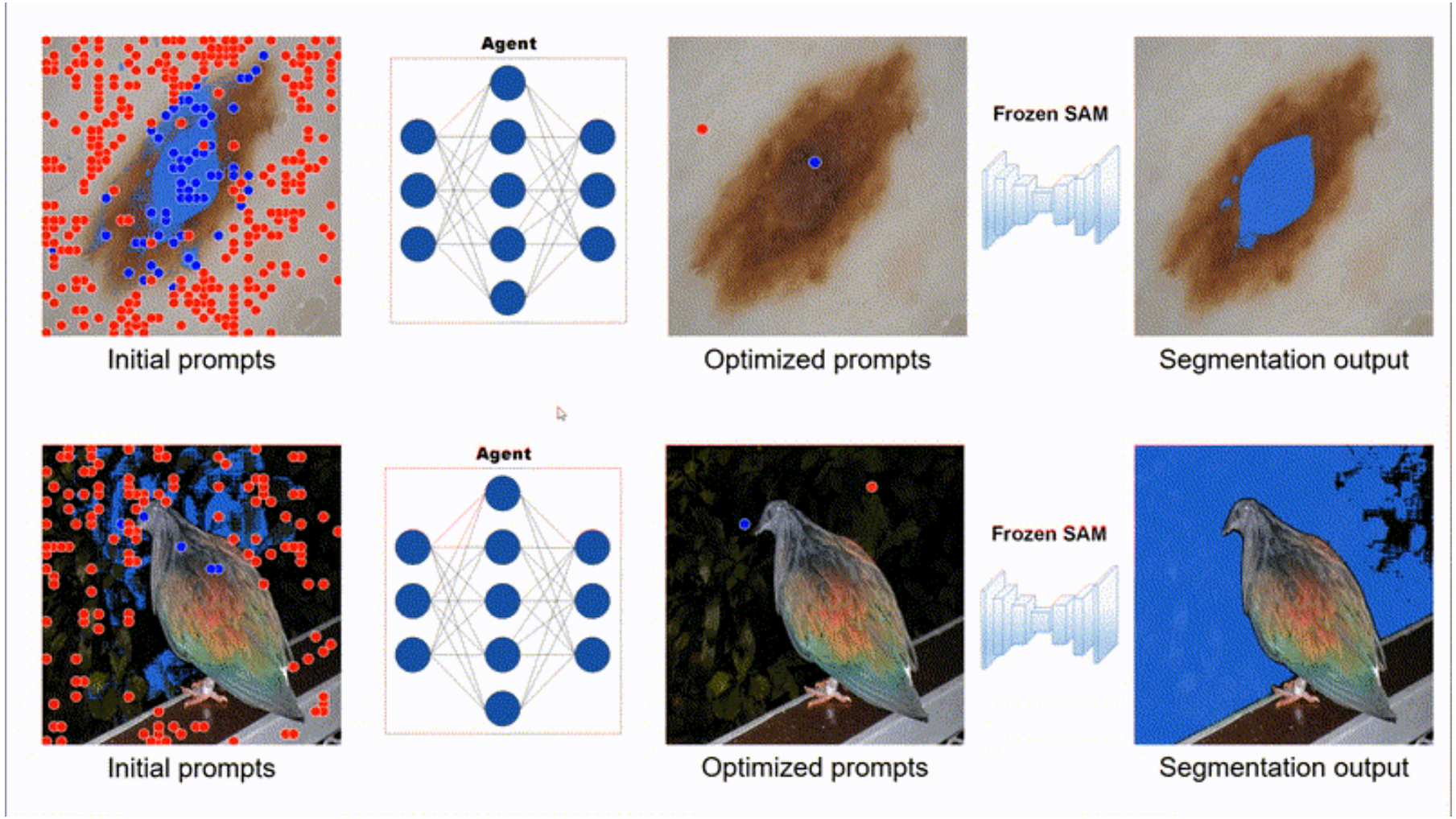
Plug-and-Play PPO









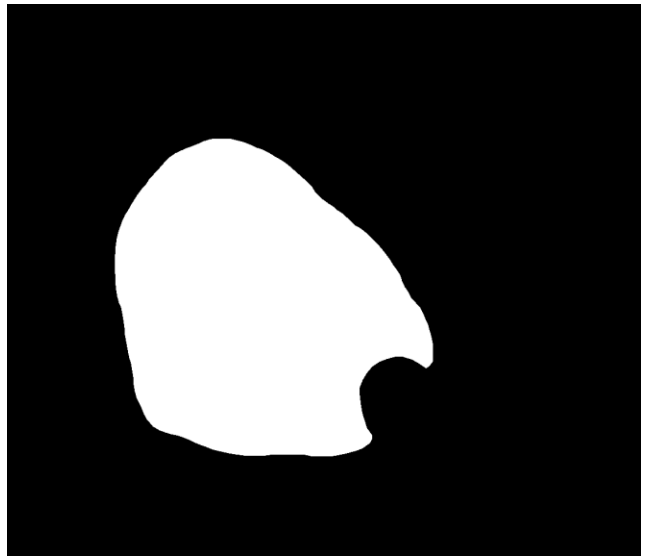

Agent
Frozen SAM
Initial prompts
Optimized prompts
Segmentation output
Agent
Frozen SAM
Initial prompts
Optimized prompts
Segmentation output

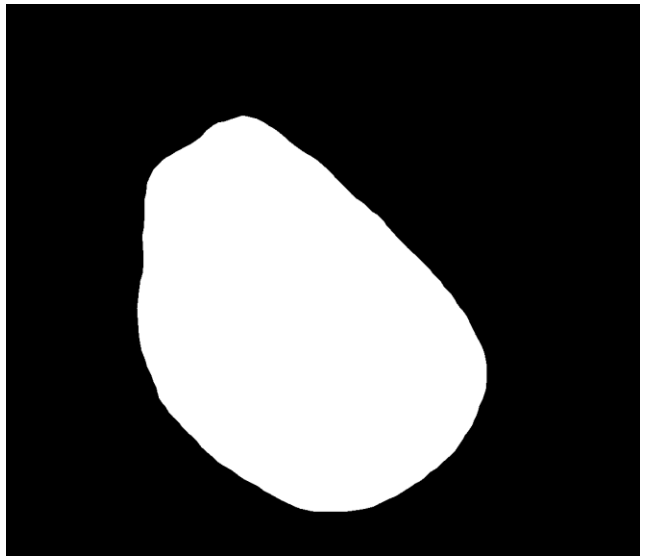
3

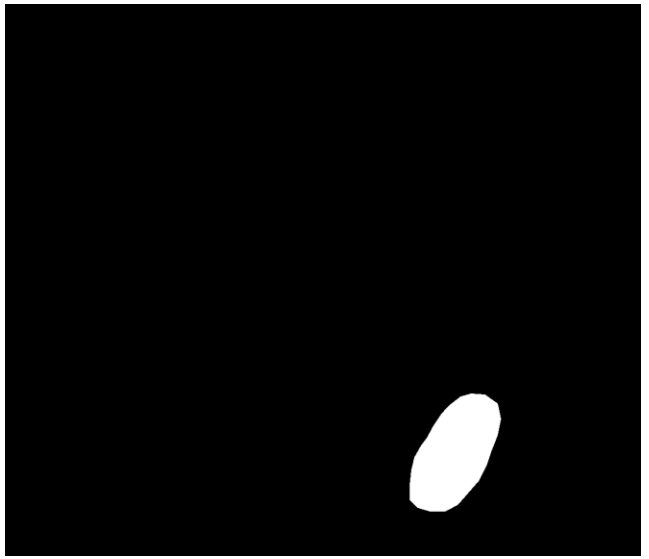
Results



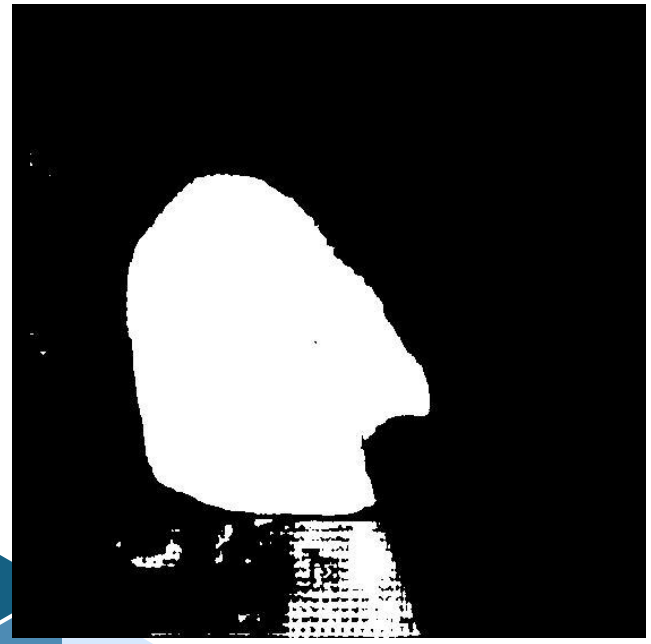
GT

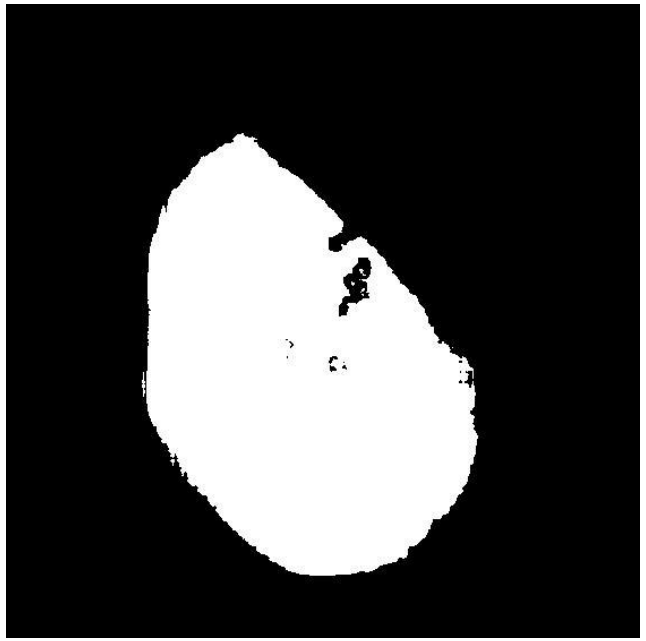






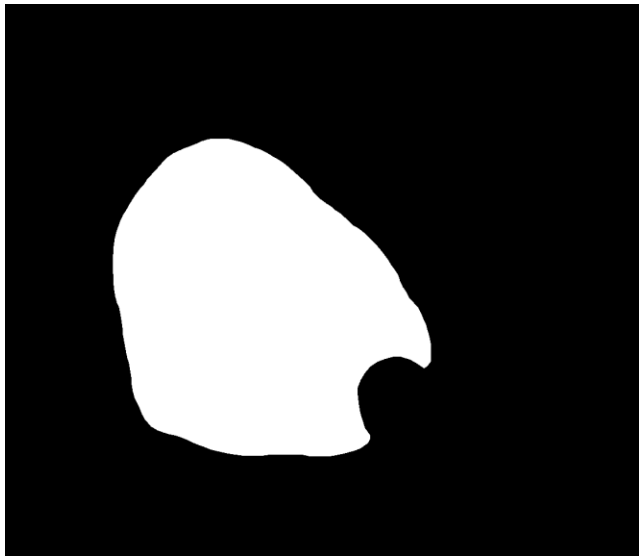
SAM

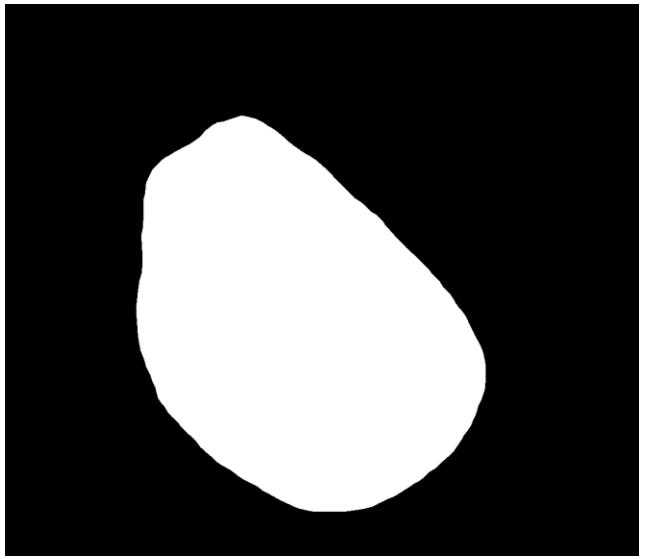


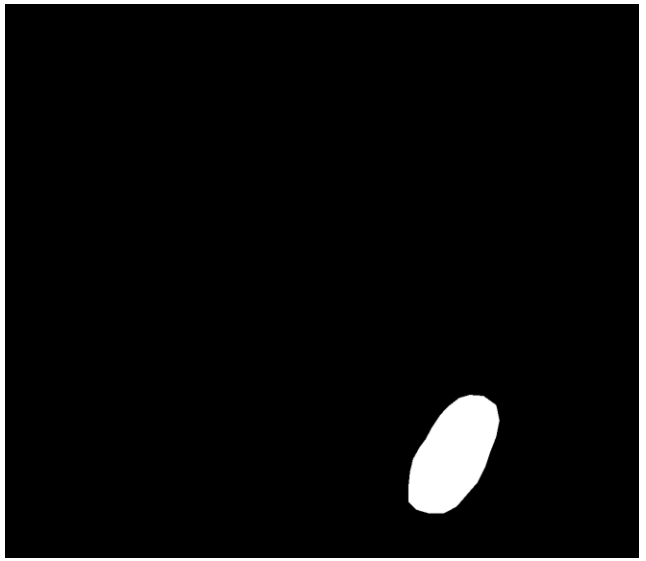




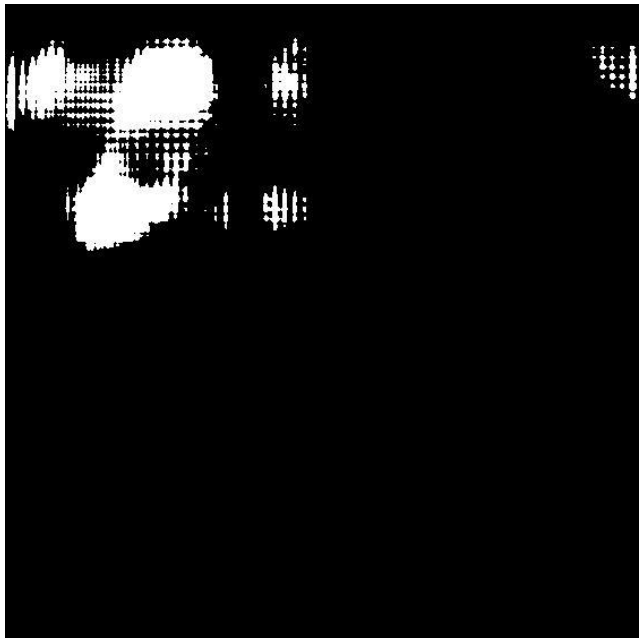
GT







MEDSAM







4

Plan



Next week

- ☐ Adapt model to medical data
- ☐ Adapt model to 3D dataset

References

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THANK YOU!

