

THE CHALLENGE

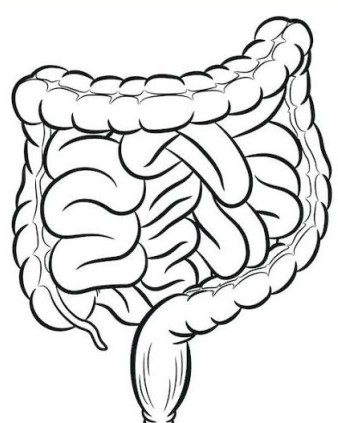
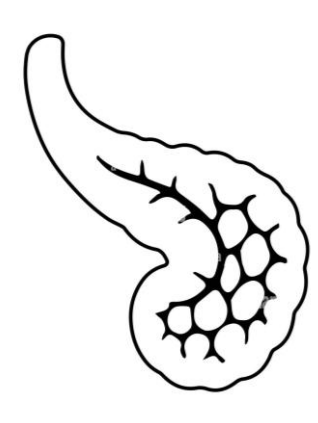
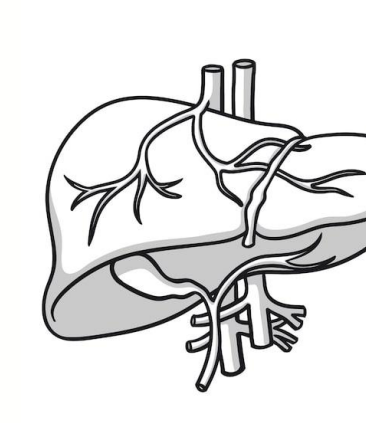
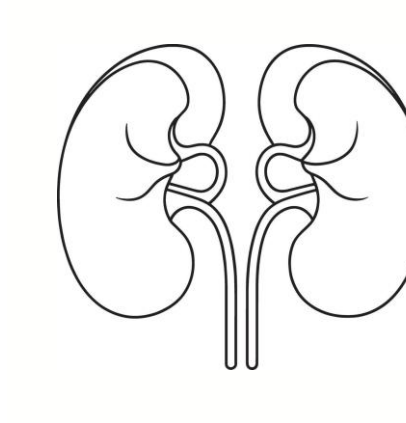
- Existing AI lacks clinician adaptability
- Limited trust and clinical usability

SOLUTION

Personalized physician-in-the-loop AI that learns from real-time clinician's corrections.

DATA

825 patients

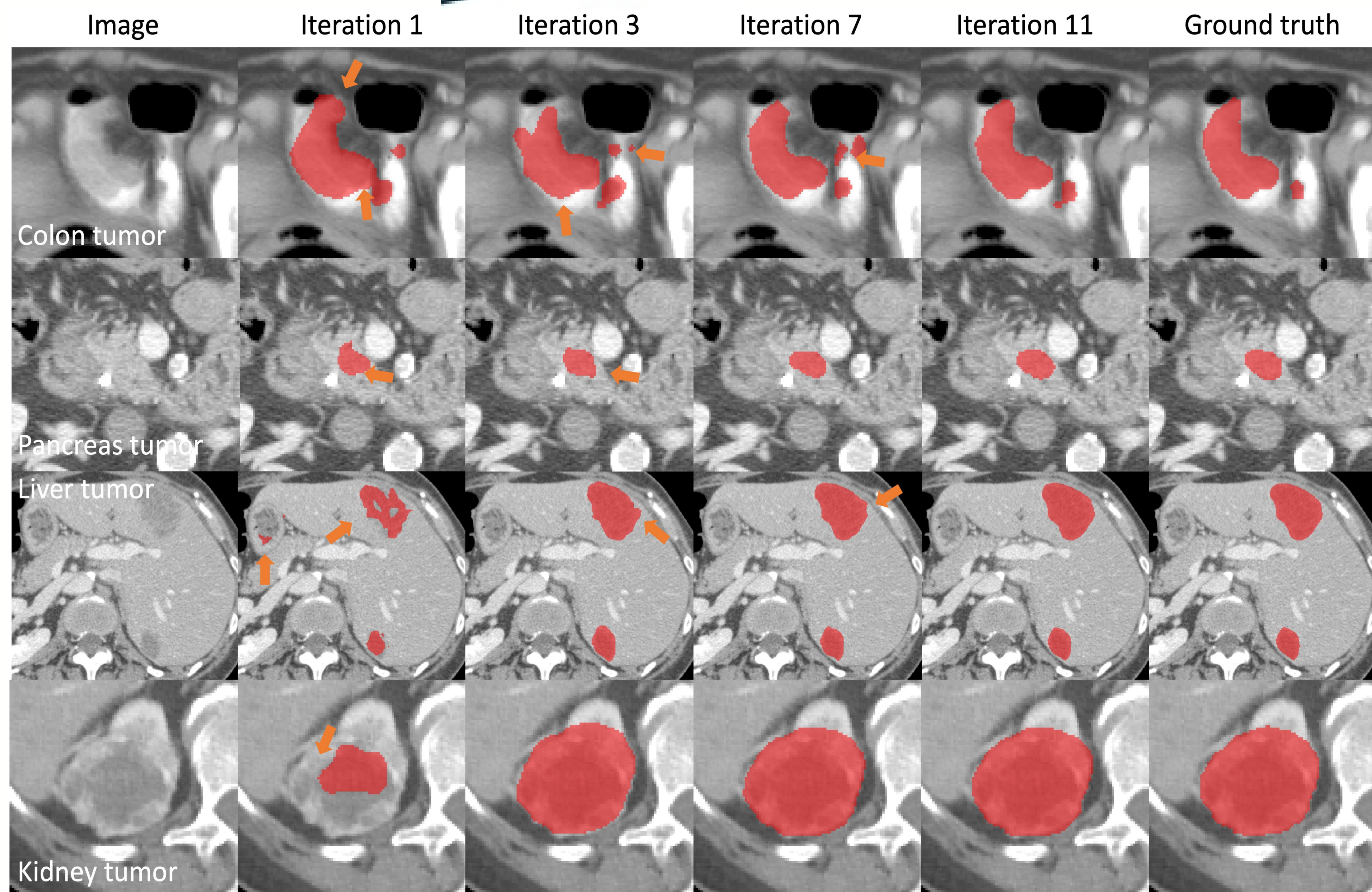
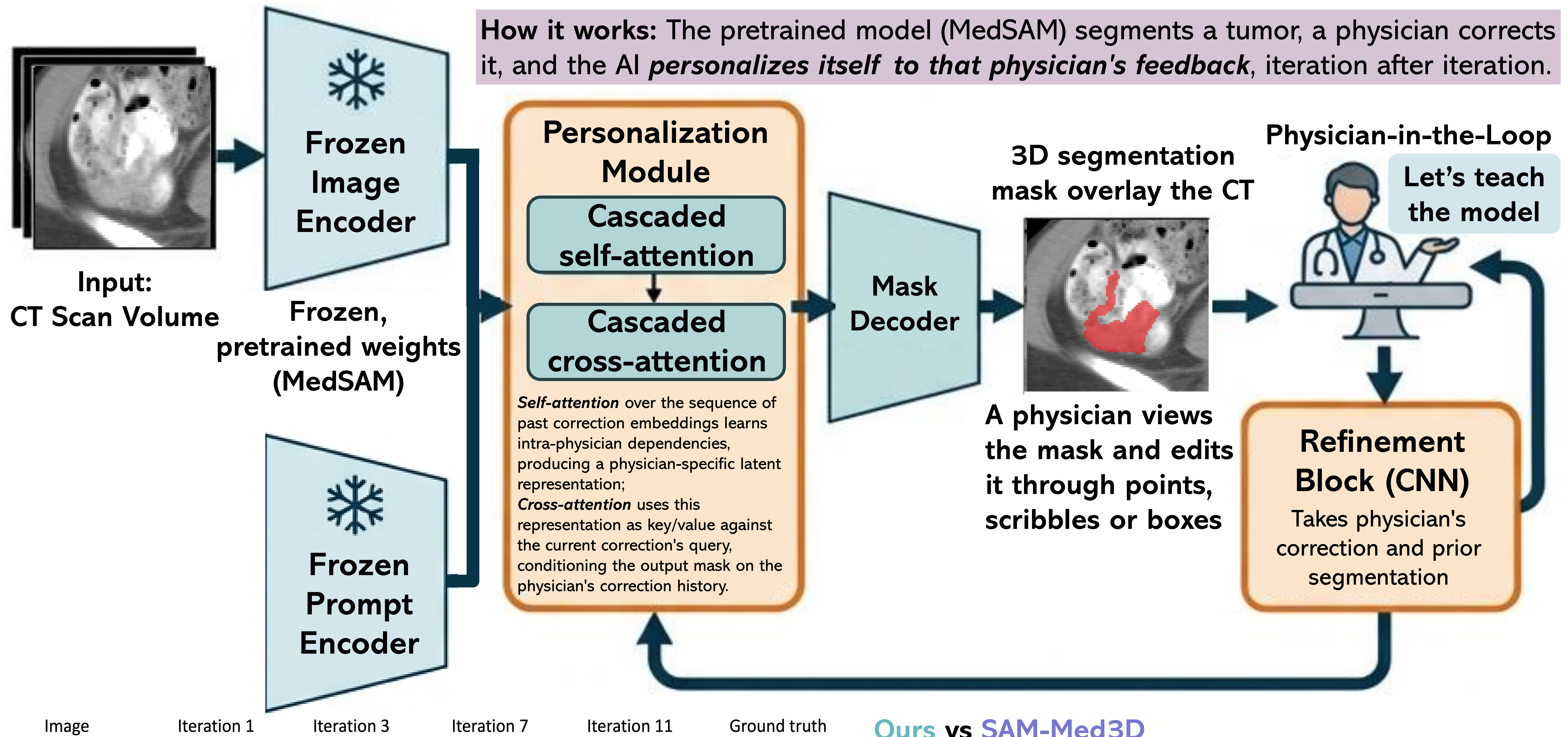
			
Colon	Pancreas	Liver	Kidney
126	281	118	300

TRAINING & EVAL

Five-fold cross-validation; loss: *Dice* + *cross-entropy*;
 Performance: *Dice* and *NSD*.

RESULTS

Segmentation refinement across physician correction iterations (1 → 3 → 7 → 11) compared to ground truth. **Orange arrows** mark defects corrected in the subsequent round.



Ours vs SAM-Med3D

Tumor/ Metric	Mean DSC		Mean NSD	
Colon	0.947	54.34	0.982	78.58
Pancreas	0.955	65.61	0.936	92.40
Liver	0.948	23.64	0.951	26.97
Kidney	0.972	76.50	0.988	88.41

CONCLUSION

The proposed model reaches near-expert 3D tumor segmentation within just a few physician corrections. **What's unique?** cascaded self-attention and cross-attention blocks let the personalization module relate each new correction to a physician's prior ones, adapting to their individual correction style instead of relearning from scratch.