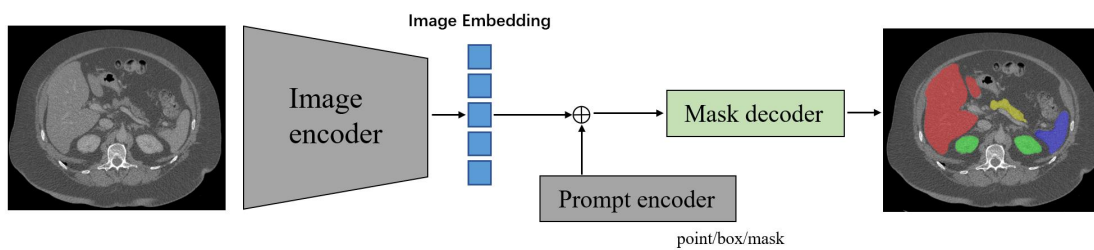# Hugging Face Report

Pushkar Ambastha

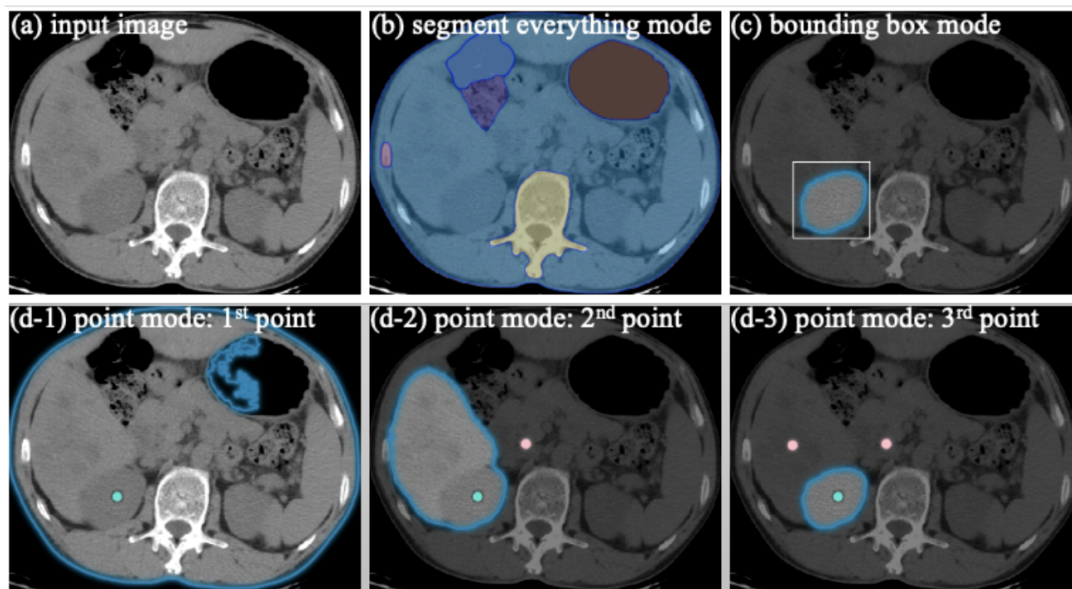Figure 2: Overview of the architecture of Segment Anything Model (SAM).

Figure 3: Segmentation results of SAM based on different segmentation modes.

- Developing novel models derived from the cumulative performance and extrapolation of Segment Anything Model (SAM), Medical SAM (Med-SAM), Fast-SAM, and Faster-SAM.

- Designed a novel pipeline using the frozen Image encoder of Med-SAM and the decoder architecture from Fast-SAM, leading to a 68% decrease in inference time and an 82% decrease in size compared to the Vanilla SAM model.

- The results, when observed in Modalities such as Pathology, X-Ray, CT, and Ultrasound, gave an average improvement of 0.48 in mean Intersection of Union *(mIOU)* and 0.42 in Dice Score Coefficient *(DSC)*.
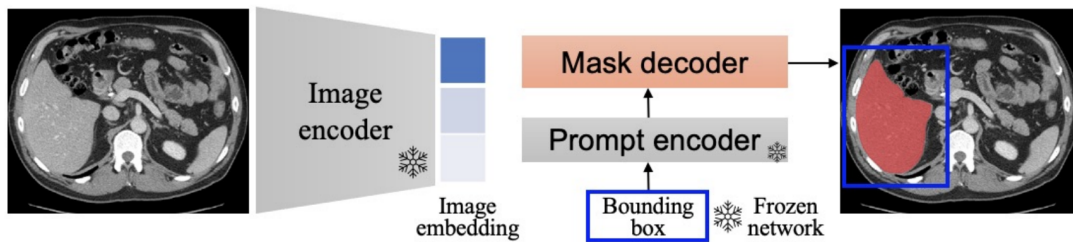

Figure 4: MedSAM: Fine-tuning Segment Anything Model for medical image segmentation by freezing the image encoder and prompt encoder and only fine-tuning the mask decoder.