

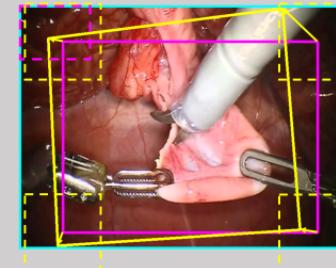
Image augmentations

→ Anchor image  $\mathcal{I}_n$  →  $\mathcal{I}_n^{\text{aug}}$

→ Offset image  $\mathcal{I}_{n+t \in [-T, T]}$  →  $\mathcal{I}_{n+t \in [-T, T]}^{\text{aug}}$

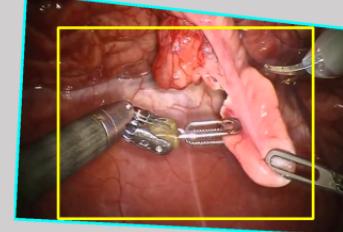
## Homography Generation Algorithm

- [] Top left corner sample area
- [] Crop polygon  $\mathbb{P}_c$  of  $\mathcal{I}_n^{\text{aug}}$  / Warp( $\mathcal{I}_{n+t \in [-T, T]}^{\text{aug}}$ ,  $\mathbf{G}^{-1}$ )
- [] Edge deviation sample area  $\Delta u_i \wedge \Delta v_i \in [-\varrho, \varrho]$
- [] Edge deviation ( $\Delta u_i, \Delta v_i$ )  $\cong \mathbf{G}_{\text{4point}}$
- [] Polygon  $\mathbb{P}'_c$  in  $\mathcal{I}_n^{\text{aug}}$   $\hat{=}$  polygon  $\mathbb{P}_c$  in Warp( $\mathcal{I}_{n+t \in [-T, T]}^{\text{aug}}$ ,  $\mathbf{G}^{-1}$ )
- [] Boundary polygon  $\mathbb{P}_b$
- [] Boundary polygon  $\mathbb{P}'_b$



$\mathcal{I}_n^{\text{aug}}$

- Perspective transform  $p : \mathbb{P}_b, \mathbf{G}^{-1} \rightarrow \mathbb{P}'_b$
- Compute  $\mathbf{DE9IM}(\mathbb{P}'_b, \mathbb{P}_c)$



Warp( $\mathcal{I}_{n+t \in [-T, T]}^{\text{aug}}$ ,  $\mathbf{G}^{-1}$ )

