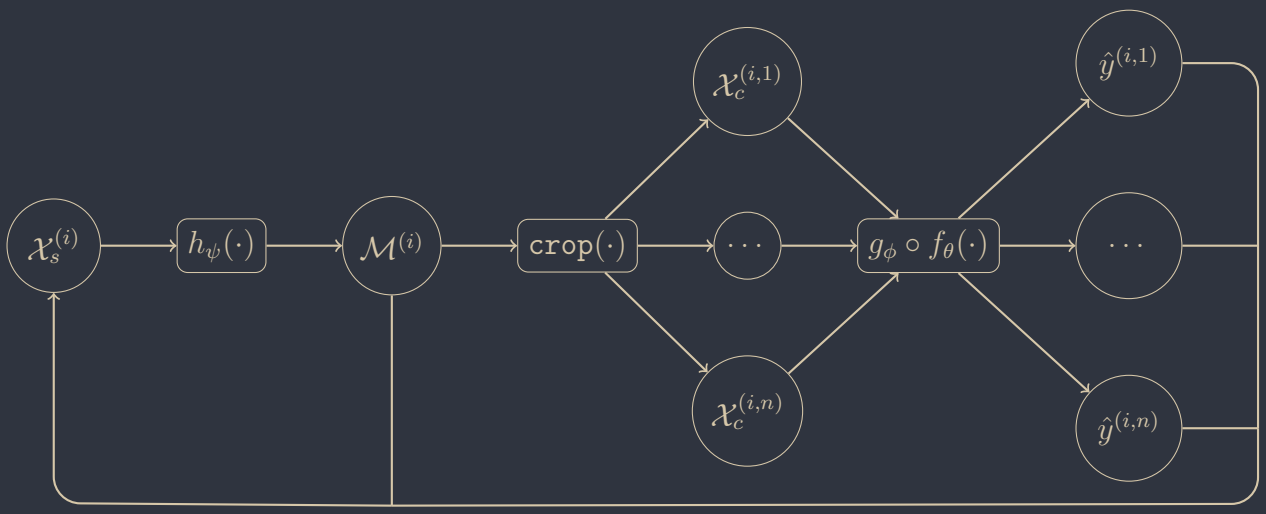
02 Feb, 2024

A Deconstruction of the MVP

- *A Deconstruction of the MVP*
  - **The Segment Anything Model** will be the model that handles all segmentation tasks. For a more thorough understanding of the model, please refer to the *A Diary for the MVP - SAM*.
  - **A Siamese Network** will be used to compare the similarity of images. For a more thorough understanding of the model, please refer to the *A Diary for the MVP - Siamese Network*.



- *The Dataset* will be decomposed into the following:
  - A dataset for the Siamese Network. It will be denoted by `the comparator ds`.
  - A testing dataset for the Segment Anything Model. It will be denoted by `the segmentor ds`.

  The dataset will be focused on one particular SKU that will denoted by `the SKU`. More Formally:

$$\mathcal{C} \triangleq \{\mathcal{P},\ \mathcal{N}\}\ ,\ \mathcal{P} \cap \mathcal{N} = \emptyset$$

$$\forall x \in \mathcal{X}\left[f(x) = \texttt{the SKU} \rightarrow x \in \mathcal{P}\ \wedge\ f(x) \neq \texttt{the SKU} \rightarrow x \in \mathcal{N}\right]$$

$$\mathcal{X}_c \triangleq \texttt{the comparator ds}\ ,\ \mathcal{X}_s \triangleq \texttt{the segmentor ds}$$

  - For the `comparator ds`, the dataset will be composed of positive and negative pairs of images. More formally:

$$\mathcal{X}_c \triangleq \mathcal{X}_{c,p} \cup \mathcal{X}_{c,n}$$

$$\mathcal{X}_{c,p} \triangleq \mathcal{P} \times \mathcal{P}\ ,\quad \mathcal{X}_{c,n} \triangleq \mathcal{P} \times \mathcal{N}$$

  - For the `segmentor ds`, the dataset will be composed of images that will be used to test the Segment Anything Model. More formally:

$$\mathcal{X}_s \triangleq \mathcal{X}_{s,p} \cup \mathcal{X}_{s,n}$$

$$\mathcal{X}_{s,p} \triangleq \mathcal{P}\ ,\quad \mathcal{X}_{s,n} \triangleq \mathcal{N}$$

  - *The SKU* of choice for the MVP is **kellogg's coco pops**