Product Design

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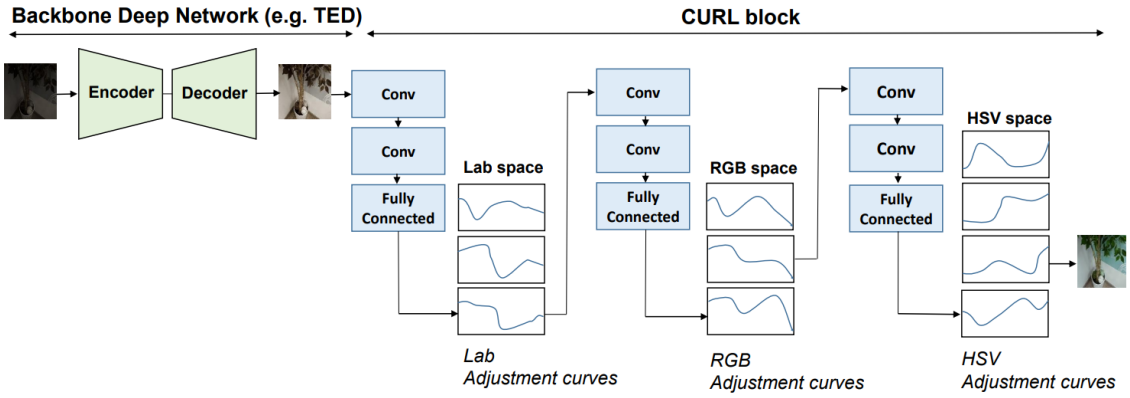
Design Overview

Architectural design



Source

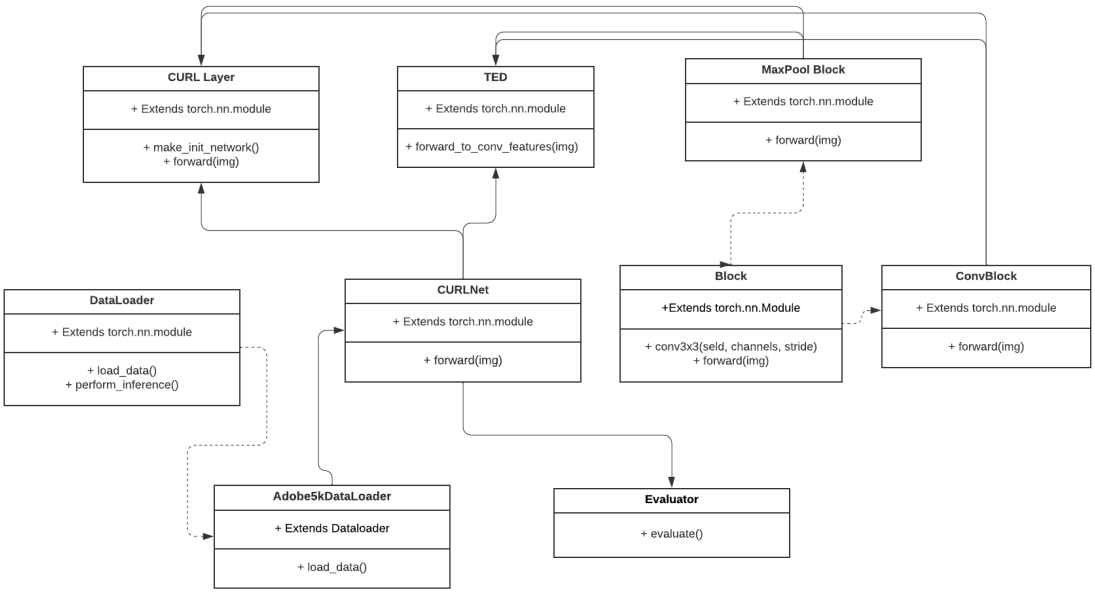
System interfaces

APIs

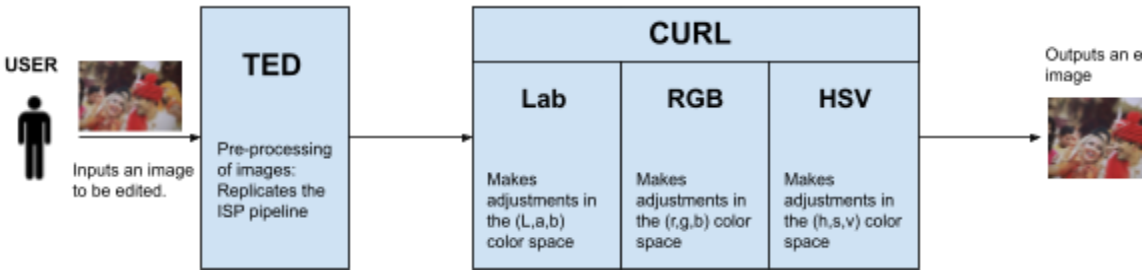
The user is going to be provided with a python module, this module will later be integrated into the Joly AI product, functions from the module can be called to perform the required operations, i.e. editing a group of photos together.

Model

TED	Extends torch.nn.Module Class state - It stores the structure of the TED Block. Class Behavior - It has the functions for forward and backward pass in the TED Block
Evaluator	Class behavior - Has functions for running a forward pass, and calculating loss.
CURLLayer	Extends torch.nn.Module Class state - It stores the structure of a layer of CURL blocks. Class Behavior - It has the functions for forward pass, and to initialize a layer (network)
Block	Extends torch.nn.Module Class state - It represents a lower level deepLFLPF block. Class Behavior - Has a function to define a 3x3 convolutional block.
ConvBlock	Extends torch.nn.Module, Block Class state - It represents a higher level convolutional block. Class Behavior - Has a function for forward pass in the block.
MaxPoolBlock	Extends torch.nn.Module, block Class state - It represents a max pooling block. Class Behavior - It has the functions for forward pass.
CURLNet	Extends torch.nn.Module Class state - It stores the structure of the CURL Block. Class Behavior - It has the functions for forward and backward pass in the CURL Block
CURLLoss	Extends torch.nn.Module Class Behavior - It has the functions that are needed for the curl block. This includes functions to create a window, compute similarity index, etc.
DataLoader	Class Behavior - Has methods to load and process data.
Adobe5kDataLoader	Extends Dataloader Class Behavior - Has methods to load and process data from Adobe5k dataset.



Sequence Diagram(s)



Design Rationale

This is a running list of issues that arise as your design process proceeds. This is an important section of the design document as it captures the **thought process** of the product's designers. It includes why or why not (rejected solutions) a design decision was made and supports future changes to the product. It should be updated whenever a design change occurs.

It is RARELY the case that the first design you consider is the best one that you can come up with that meets the requirements and that can be implemented, tested, and delivered on schedule. Your instructor will be looking for signs that you considered at least a few approaches, and that you had a coherent rationale for preferring the design your team eventually adopts.

This is the place to record such thoughts – what alternatives did you consider? What are the strengths (and deficiencies) of the final design compared to the other alternatives considered? Why did you select the approach you finally chose? This last question should be answered with an eye to the tradeoffs inevitably involved in creating an appropriate design.