Project Documentation

File: `dataloader.py`

Classes

`PredDataset` **(Line 7)**

Reads image and trimap pairs from folder.

Methods: - `__init__(self, img_dir, trimap_dir)`
Line 12: No docstring

- `__len__(self)`
  Line 16: No docstring

- `__getitem__(self, idx)`
  Line 19: No docstring

File: `demo.py`

Functions

`np_to_torch(x)` **(Line 16)**

No docstring

`scale_input(x, scale, scale_type)` **(Line 20)**

Scales inputs to multiple of 8.

`predict_fba_folder(model, args)` **(Line 29)**

No docstring

`pred(image_np, trimap_np, model)` **(Line 46)**

Predict alpha, foreground and background. Parameters: image*np -- the image in rgb format between 0 and 1. Dimensions: (h, w, 3) trimap*np -- two channel trimap, first background then foreground. Dimensions: (h, w, 2) Returns: fg: foreground image in rgb format between 0 and 1. Dimensions: (h, w, 3) bg: background image in rgb format between 0 and 1. Dimensions: (h, w, 3) alpha: alpha matte image between 0 and 1. Dimensions: (h, w)

File: `generate_trimap.py`

Functions

`trimap(probs, size, conf_threshold)` **(Line 17)**

Creates a trimap based on a simple dilation algorithm.

`browse_and_process_image(target_class, conf_threshold, output_dir)` **(Line 30)**

Allows users to select an image file, processes it, and generates a trimap.

`select_output_directory()` **(Line 83)**

Opens a dialog to select the output directory.

`main()` **(Line 92)**

No docstring

File: `gen_trimap.py`

Functions

`trimap(prob_map, kernel_size, conf_threshold)` **(Line 19)**

Generate a trimap from the probability map.

`browse_and_process_image(target_class, conf_threshold, output_dir)` **(Line 48)**

Allows users to upload an image, processes it, and generates a trimap.

File: `layers_WS.py`

Classes

`Conv2d` **(Line 6)**

No docstring

Methods: - `__init__(self, in_channels, out_channels, kernel_size, stride, padding, dilation, groups, bias)`
Line 8: No docstring

- `forward(self, x)`
  Line 13: No docstring

File: `models.py`

Classes

`MattingModule` **(Line 29)**

No docstring

Methods: - `__init__(self, net_enc, net_dec)`
Line 30: No docstring

- `forward(self, image, two_chan_trimap, image_n, trimap_transformed)`
  Line 35: No docstring

ModelBuilder (Line 41)

No docstring

Methods: - `build_encoder(self, arch)`
Line 42: No docstring

- `build_decoder(self, arch, batch_norm)`
  Line 75: No docstring

ResnetDilatedBN (Line 82)

No docstring

Methods: - `__init__(self, orig_resnet, dilate_scale)`
Line 83: No docstring

- `_nostride_dilate(self, m, dilate)`
  Line 112: No docstring

- `forward(self, x, return_feature_maps)`
  Line 127: No docstring

Resnet (Line 148)

No docstring

Methods: - `__init__(self, orig_resnet)`
Line 149: No docstring

- `forward(self, x, return_feature_maps)`
  Line 168: No docstring

ResnetDilated (Line 191)

No docstring

Methods: - `__init__(self, orig_resnet, dilate_scale)`
Line 192: No docstring

- `_nostride_dilate(self, m, dilate)`
  Line 215: No docstring

- `forward(self, x, return_feature_maps)`
  Line 230: No docstring

fba_decoder (Line 268)

No docstring

Methods: - `__init__(self, batch_norm)`
Line 269: No docstring

- `forward(self, conv_out, img, indices, two_chan_trimap)`
  Line 326: No docstring

File: `resnet_bn.py`

Classes

`BasicBlock` (Line 14)

No docstring

Methods: - `__init__(self, inplanes, planes, stride, downsample)`
Line 17: No docstring

- `forward(self, x)`
  Line 27: No docstring

`Bottleneck` (Line 46)

No docstring

Methods: - `__init__(self, inplanes, planes, stride, downsample)`
Line 49: No docstring

- `forward(self, x)`
  Line 62: No docstring

`ResNet` (Line 85)

No docstring

Methods: - `__init__(self, block, layers, num_classes)`
Line 87: No docstring

- `_make_layer(self, block, planes, blocks, stride)`
  Line 116: No docstring

- `forward(self, x)`
  Line 133: No docstring

File: `resnet_GN_WS.py`

Classes

`BasicBlock` (Line 18)

No docstring

Methods: - `__init__(self, inplanes, planes, stride, downsample)`
Line 21: No docstring

- `forward(self, x)`
  Line 31: No docstring

Bottleneck (Line 50)

No docstring

Methods: - `__init__(self, inplanes, planes, stride, downsample)`
Line 53: No docstring

- `forward(self, x)`
  Line 65: No docstring

ResNet (Line 88)

No docstring

Methods: - `__init__(self, block, layers, num_classes)`
Line 90: No docstring

- `_make_layer(self, block, planes, blocks, stride)`
  Line 105: No docstring

- `forward(self, x)`
  Line 121: No docstring

File: `transforms.py`

Functions

`dt(a)` (Line 7)

No docstring

`trimap_transform(trimap)` (Line 11)

No docstring

`groupnorm_normalise_image(img, format)` (Line 31)

Accept rgb in range 0,1

`groupnorm_denormalise_image(img, format)` (Line 45)

Accept rgb, normalised, return in range 0,1

File: `__init__.py`