main()

初始化

定義model為class CNNModel()的物件

設置要繪製gradcam的目標層和分類

讀取影像

調整影像大小，色彩格式調整為RGB，並轉換成pytorch tensor格式

定義cam為class GradCAM()的物件

執行cam()，計算gradcam圖

執行show_cam_on_image()

顯示gradcam和原圖的疊圖

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torch.nn.Module

GradCAM

+ model :CNNModel()

+ target_layers: list

+ reshape_transform: function

+ activations_and_grads: ActivationsAndGradients()

+ get_cam_weights(grads)

+ get_loss(output, target_category)

+ get_cam_image(self, activations, grads)

+ get_target_width_height(input_tensor)

+ compute_cam_per_layer(self, input_tensor)

+ aggregate_multi_layers(self, cam_per_target_layer)

+ scale_cam_image(cam, target_size=None)

+ __call__(self, input_tensor, target_category=None)

+ __del__(self)

+ __enter__(self))

+ __exit__(self, exc_type, exc_value, exc_tb)

CNNModel

+ conv_layers: torch.nn.modules.container.Sequential

+ fc_layers: torch.nn.modules.container.Sequential

+ forward(self, x)

ActivationsAndGradients

+ model :CNNModel()

+ gradients: list

+ activations: list

+ reshape_transform: function

+ handles: list

+ save_activation(self, module, input, output)

+ save_gradient(self, module, grad_input, grad_output)

+ __call__(self, x)

+ release(self)