9 Appendix

In this appendix, we provide the pseudo code implementation for SAC variants discussed in Section 4.2, including SAC-S, SAC-IS, SAC-SK and SAC-ISK, and the figure illustration of prior works, including SE [14], CBAM [51], CAM [58] and PAC [42].

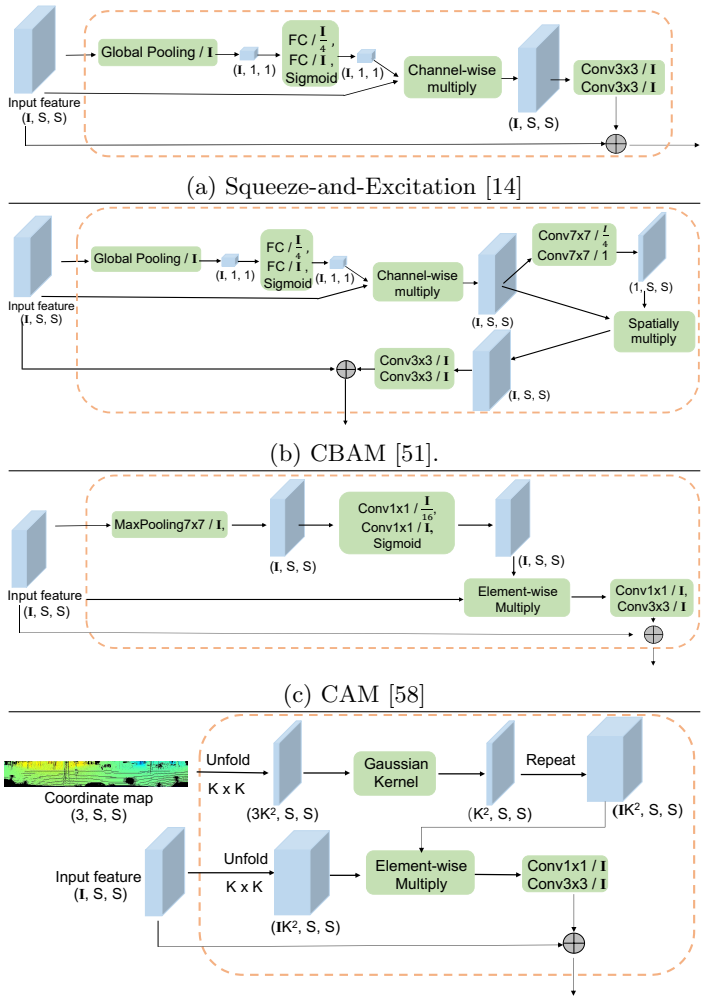
```
""" input_feature (N, C, H, W), coordinate_map (N, 3, H, W)
output_feature (N, C, H, W) """


def SAC_S(input_feature, coordi_map):
# Note: Pseudo code for SAC-S.
  attention_map = Conv_attention7x7(coordin_map) # (N, 1, H, W)
  input_feature = input_feature * attention_map # (N, C, H, W)
  feature = Conv_feature3x3(input_feature) # (N, C, H, W)
  output_feature = feature+input_feature # (N, C, H, W)
  return output_feature # (N, C, H, W)

def SAC_IS(input_feature, coordi_map):
# Note: Pseudo code for SAC-IS.
  attention_map = Conv_attention7x7(coordin_map) # (N, C, H, W)
  input_feature = input_feature * attention_map # (N, C, H, W)
  feature = Conv_feature3x3(input_feature) # (N, C, H, W)
  output_feature = feature+input_feature # (N, C, H, W)
  return output_feature # (N, C, H, W)

def SAC_SK(input_feature, coordi_map):
# Note: Pseudo code for SAC-SK.
  unfold_feature = unfold(input_feature, kernel_size=K,
  padding=K//2) # (N, C*K*K, H, W)
  attention_map = Conv_attention7x7(coordin_map) # (N, K*K, H, W)
  attention_map = attention_map.repeat(1, C, 1, 1) # (N, C*K*K, H, W)
  input_feature = input_feature * attention_map # (N, C*K*K, H, W)
  feature = Conv_feature1x1(input_feature) # (N, C, H, W)
  feature = Conv_feature3x3(feature) # (N, C, H, W)
  output_feature = feature+input_feature # (N, C, H, W)
  return output_feature # (N, C, H, W)


def SAC_ISK(input_feature, coordi_map):
# Note: Pseudo code for SAC-ISK.
  unfold_feature = unfold(input_feature, kernel_size=K,
  padding=K//2) # (N, C*K*K, H, W )
  attention_map = Conv_attention7x7(coordin_map) # (N, C*K*K, H, W)
  input_feature = input_feature * attention_map # (N, C*K*K, H, W)
  feature = Conv_feature1x1(input_feature) # (N, C, H, W)
```



(a) Squeeze-and-Excitation [14]

(b) CBAM [51].

(c) CAM [58]

(d) PAC [42]

Fig. 5: Variants of spatially-adaptive convolution from previous work.

```
feature = Conv_feature3x3(feature) # (N, C, H, W)
output_feature = feature+input_feature # (N, C, H, W)
return output_feature # (N, C, H, W)
```