TOPIC

3D Point Cloud Model 경량화

DATE

03.26

KEYPOINTS

NOTES

코드분석

```python
class PointConvBidirection(nn.Module):
    def __init__(self):
        super(PointConvBidirection, self).__init__()

        flow_nei = 32
        feat_nei = 16
        self.scale = scale
        #l0: 8192
        self.level0 = Conv1d(3, 32)
        self.level0_1 = Conv1d(32, 32)
        # self.level0_1_t1 = Conv1d(32, 32)
        # self.level0_1_t2 = Conv1d(32, 32)
        self.cross0 = CrossLayer(flow_nei, 32 + 32 , [32, 32]
        , [32, 32])
        self.flow0 = SceneFlowEstimatorResidual(32 + 64, 32)
        self.level0_2 = Conv1d(32, 64)

        #l1: 2048
        self.level1 = PointConvD(2048, feat_nei, 64 + 3, 64)
        self.cross1 = CrossLayer(flow_nei, 64 + 32, [64, 64],
        [64, 64])
        self.flow1 = SceneFlowEstimatorResidual(64 + 64, 64)
        self.level1_0 = Conv1d(64, 64)
        # self.level1_0_t1 = Conv1d(64, 64)
        # self.level1_0_t2 = Conv1d(64, 64)
        self.level1_1 = Conv1d(64, 128)

        #l2: 512
        self.level2 = PointConvD(512, feat_nei, 128 + 3, 128)
        self.cross2 = CrossLayer(flow_nei, 128 + 64, [128,
        128], [128, 128])
        self.flow2 = SceneFlowEstimatorResidual(128 + 64, 128)
        self.level2_0 = Conv1d(128, 128)
        # self.level2_0_t1 = Conv1d(128, 128)
        # self.level2_0_t2 = Conv1d(128, 128)
        self.level2_1 = Conv1d(128, 256)

        #l3: 256
        self.level3 = PointConvD(256, feat_nei, 256 + 3, 256)
        self.cross3 = CrossLayer(flow_nei, 256 + 64, [256,
        256], [256, 256])
        self.flow3 = SceneFlowEstimatorResidual(256, 256)
        self.level3_0 = Conv1d(256, 256)
        # self.level3_0_t1 = Conv1d(256, 256)
        # self.level3_0_t2 = Conv1d(256, 256)
        self.level3_1 = Conv1d(256, 512)

        #l4: 64
        self.level4 = PointConvD(64, feat_nei, 512 + 3, 256)

        #deconv
        # self.deconv4_3_t1 = Conv1d(256, 64)
        # self.deconv4_3_t2 = Conv1d(256, 64)
        self.deconv4_3 = Conv1d(256, 64)
        self.deconv3_2 = Conv1d(256, 64)
        self.deconv2_1 = Conv1d(128, 32)
        self.deconv1_0 = Conv1d(64, 32)

        #warping
        self.warping = PointWarping()

        #upsample
        self.upsample = UpsampleFlow()
```

Point Conv D

Point Conv k

SceneflowEstimator

Residual을 이용한

성능향상

SUMMARY