实验设备： RTX3060

Epoches:2680 模型参数和论文一样

N\_past: 10

N\_future: 1

N\_trans: 5-39(random)

加入了位置编码和关键帧编码（0,1,2）

损失在这里做了调整, offsets\_pred 和offsets\_gt 在这里用：局部坐标来获取：

offsets\_gt = torch.split(torch.from\_numpy(local\_p\_gt), (1, 21), dim=2)[1].to(device)  
offsets\_pred = torch.split(torch.from\_numpy(local\_p\_pred), (1, 21), dim=2)[1].to(device)

loss\_ik += torch.mean(torch.abs(offsets\_pred - offsets\_gt)) *# ik反运动学损失*loss\_quat += torch.mean(torch.abs(glbl\_q\_pred - glbl\_q\_gt)) *# 旋转四元数损失*loss\_position += torch.mean(torch.abs(glbl\_p\_pred - glbl\_p\_gt) / x\_std\_n) *# 位移损失  
# 计算损失函数*loss\_ik = opt['train']['loss\_ik\_weight'] \* loss\_ik 0.01  
loss\_quat = opt['train']['loss\_quat\_weight'] \* loss\_quat 1.0  
loss\_pos = opt['train']['loss\_position\_weight'] \* loss\_position 1.0  
loss\_total = loss\_pos + loss\_ik + loss\_quat