## Machine Learning\_SGD

July 11, 2022

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[4]: import tensorflow as tf
     import numpy as np
     xData = [1,2,3,4,5,6,7]
     yData = [25000,55000,75000,110000,128000,155000,180000]
    model = tf.keras.models.Sequential()
     model.add(tf.keras.layers.Dense(1, input_dim =1 ))
     sgd = tf.keras.optimizers.SGD(
         learning_rate=0.01,
         momentum=0.0,
         nesterov=False,
         name='SGD'
     )
     model.compile(loss = 'mean_squared_error', optimizer = sgd)#
     model.fit(xData,yData,epochs = 5000)#
                                                 5000
     testdata = [8,100]#
     print(model.predict(testdata))
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			======]	-	0s	3ms/step	- lc	ss:	13524773.0000
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	17/5000 		======]	_	0s	5ms/step	- lc	ss:	10928805.0000
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Epoch 37/5000					
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Epoch 38/5000 1/1 [==========]	_	Λe	Ama/stan -	logg.	10585425 0000
Epoch 39/5000		OS	4ms/sceb	TOSS.	10303423.0000
1/1 [========]	-	0s	4ms/step -	loss:	10570439.0000
Epoch 40/5000					
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Epoch 41/5000 1/1 [==========]	_	Λa	/mg/gton -	loggi	105/0909 0000
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1/1 [=======]	_	0s	5ms/step -	loss:	10526165.0000
Epoch 43/5000					
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Epoch 44/5000		^	0 / 1	,	10107000 0000
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Epoch 46/5000					
1/1 [======]	-	0s	4ms/step -	loss:	10468706.0000
Epoch 47/5000		_	- /	_	
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Epoch 49/5000		Ü	Zmb, boop	TODD.	10110027.0000
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Epoch 54/5000		0-	1ma/a+	1	10250052 0000
1/1 [=========] Epoch 55/5000	_	US	4ms/step -	TOSS:	10356953.0000
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Epoch 56/5000					
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Epoch 58/5000			_		
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Epoch 59/5000 1/1 [========]	_	0s	5ms/sten -	loss	10293723 0000
Epoch 60/5000		OB	ошь, в сер	TODD.	10230720.0000
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Epoch 61/5000		•	<b>5</b> / .	-	10000001 0000
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Epoch 66/5000					
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Epoch 67/5000 1/1 [========]	_	0s	4ms/step -	loss:	10194437.0000
Epoch 68/5000			2, 200p		
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Epoch 69/5000		•	0 / .	-	10170550 0000
1/1 [======] Epoch 70/5000	_	0s	3ms/step -	loss:	10170552.0000
1/1 [========]	_	0s	3ms/step -	loss:	10158751.0000
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	128/5000 ]		0.5	2mg/gton logg, 0600000 0000	^
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Epoch 603/5000
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Epoch 630/5000
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Epoch 632/5000
Epoch 633/5000
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Epoch 636/5000
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Epoch 640/5000
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Epoch 650/5000
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Epoch 655/5000
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Epoch 675/5000
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Epoch 680/5000
Epoch 681/5000
Epoch 682/5000
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Epoch 688/5000
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Epoch 698/5000
Epoch 699/5000
Epoch 700/5000
Epoch 701/5000
Epoch 702/5000
Epoch 703/5000
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Epoch 704/5000
Epoch 705/5000
Epoch 706/5000
Epoch 707/5000
Epoch 708/5000
Epoch 709/5000
1/1 [=======] - Os 4ms/step - loss: 8643760.0000
Epoch 710/5000
Epoch 711/5000
Epoch 712/5000
Epoch 713/5000
Epoch 714/5000
Epoch 715/5000
Epoch 716/5000
Epoch 717/5000
Epoch 718/5000
Epoch 719/5000
Epoch 720/5000
Epoch 721/5000
Epoch 722/5000
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Epoch 726/5000
Epoch 727/5000
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Epoch 728/5000
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Epoch 736/5000
Epoch 737/5000
Epoch 738/5000
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Epoch 743/5000
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Epoch 745/5000
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Epoch 747/5000
Epoch 748/5000
Epoch 749/5000
Epoch 750/5000
Epoch 751/5000
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Epoch 753/5000
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Epoch 764/5000
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Epoch 766/5000
Epoch 767/5000
Epoch 768/5000
Epoch 769/5000
Epoch 770/5000
Epoch 771/5000
Epoch 772/5000
Epoch 773/5000
Epoch 774/5000
Epoch 775/5000
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Epoch 776/5000
Epoch 777/5000
Epoch 778/5000
Epoch 779/5000
Epoch 780/5000
Epoch 781/5000
Epoch 782/5000
Epoch 783/5000
Epoch 784/5000
Epoch 785/5000
Epoch 786/5000
Epoch 787/5000
Epoch 788/5000
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Epoch 798/5000
Epoch 799/5000
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Epoch 800/5000
Epoch 801/5000
Epoch 802/5000
Epoch 803/5000
Epoch 804/5000
Epoch 805/5000
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Epoch 807/5000
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Epoch 817/5000
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Epoch 819/5000
Epoch 820/5000
Epoch 821/5000
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Epoch 823/5000
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Epoch 825/5000
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Epoch 840/5000
Epoch 841/5000
Epoch 842/5000
Epoch 843/5000
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Epoch 846/5000
Epoch 847/5000
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Epoch 848/5000
Epoch 849/5000
Epoch 850/5000
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Epoch 873/5000
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Epoch 886/5000
Epoch 887/5000
Epoch 888/5000
Epoch 889/5000
Epoch 890/5000
Epoch 891/5000
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Epoch 894/5000
Epoch 895/5000
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Epoch 896/5000
Epoch 897/5000
Epoch 898/5000
Epoch 899/5000
Epoch 900/5000
Epoch 901/5000
Epoch 902/5000
Epoch 903/5000
Epoch 904/5000
Epoch 905/5000
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Epoch 907/5000
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Epoch 909/5000
Epoch 910/5000
Epoch 911/5000
Epoch 912/5000
Epoch 913/5000
Epoch 914/5000
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Epoch 918/5000
Epoch 919/5000
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Epoch 920/5000
Epoch 921/5000
Epoch 922/5000
Epoch 923/5000
Epoch 924/5000
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Epoch 928/5000
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Epoch 944/5000
Epoch 945/5000
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Epoch 950/5000
Epoch 951/5000
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Epoch 961/5000
Epoch 962/5000
Epoch 963/5000
Epoch 964/5000
Epoch 965/5000
Epoch 966/5000
Epoch 967/5000
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Epoch 968/5000
Epoch 969/5000
Epoch 970/5000
Epoch 971/5000
Epoch 972/5000
Epoch 973/5000
1/1 [========] - Os 2ms/step - loss: 8634101.0000
Epoch 974/5000
Epoch 975/5000
Epoch 976/5000
Epoch 977/5000
Epoch 978/5000
Epoch 979/5000
Epoch 980/5000
Epoch 981/5000
Epoch 982/5000
Epoch 983/5000
Epoch 984/5000
Epoch 985/5000
Epoch 986/5000
Epoch 987/5000
Epoch 988/5000
Epoch 989/5000
Epoch 990/5000
Epoch 991/5000
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Epoch 992/5000
Epoch 993/5000
Epoch 994/5000
Epoch 995/5000
Epoch 996/5000
Epoch 997/5000
1/1 [========] - Os 4ms/step - loss: 8633857.0000
Epoch 998/5000
Epoch 999/5000
Epoch 1000/5000
Epoch 1001/5000
Epoch 1002/5000
Epoch 1003/5000
Epoch 1004/5000
Epoch 1005/5000
Epoch 1006/5000
Epoch 1007/5000
Epoch 1008/5000
Epoch 1009/5000
Epoch 1010/5000
Epoch 1011/5000
Epoch 1012/5000
Epoch 1013/5000
Epoch 1014/5000
Epoch 1015/5000
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Epoch 1016/5000
Epoch 1017/5000
Epoch 1018/5000
Epoch 1019/5000
Epoch 1020/5000
Epoch 1021/5000
Epoch 1022/5000
Epoch 1023/5000
Epoch 1024/5000
Epoch 1025/5000
Epoch 1026/5000
Epoch 1027/5000
Epoch 1028/5000
Epoch 1029/5000
Epoch 1030/5000
Epoch 1031/5000
Epoch 1032/5000
Epoch 1033/5000
Epoch 1034/5000
Epoch 1035/5000
Epoch 1036/5000
Epoch 1037/5000
Epoch 1038/5000
Epoch 1039/5000
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Epoch 1040/5000
Epoch 1041/5000
Epoch 1042/5000
Epoch 1043/5000
Epoch 1044/5000
Epoch 1045/5000
Epoch 1046/5000
Epoch 1047/5000
Epoch 1048/5000
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Epoch 1050/5000
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Epoch 1060/5000
Epoch 1061/5000
Epoch 1062/5000
Epoch 1063/5000
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Epoch 1064/5000
Epoch 1065/5000
Epoch 1066/5000
Epoch 1067/5000
Epoch 1068/5000
Epoch 1069/5000
Epoch 1070/5000
Epoch 1071/5000
Epoch 1072/5000
Epoch 1073/5000
Epoch 1074/5000
Epoch 1075/5000
Epoch 1076/5000
Epoch 1077/5000
Epoch 1078/5000
Epoch 1079/5000
Epoch 1080/5000
Epoch 1081/5000
Epoch 1082/5000
Epoch 1083/5000
Epoch 1084/5000
Epoch 1085/5000
Epoch 1086/5000
Epoch 1087/5000
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Epoch 1088/5000
Epoch 1089/5000
Epoch 1090/5000
Epoch 1091/5000
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Epoch 1093/5000
Epoch 1094/5000
Epoch 1095/5000
Epoch 1096/5000
Epoch 1097/5000
Epoch 1098/5000
Epoch 1099/5000
Epoch 1100/5000
Epoch 1101/5000
Epoch 1102/5000
Epoch 1103/5000
Epoch 1104/5000
Epoch 1105/5000
Epoch 1106/5000
Epoch 1107/5000
Epoch 1108/5000
Epoch 1109/5000
Epoch 1110/5000
Epoch 1111/5000
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Epoch 1112/5000
Epoch 1113/5000
Epoch 1114/5000
Epoch 1115/5000
Epoch 1116/5000
Epoch 1117/5000
Epoch 1118/5000
Epoch 1119/5000
Epoch 1120/5000
Epoch 1121/5000
Epoch 1122/5000
Epoch 1123/5000
Epoch 1124/5000
Epoch 1125/5000
Epoch 1126/5000
Epoch 1127/5000
Epoch 1128/5000
Epoch 1129/5000
Epoch 1130/5000
Epoch 1131/5000
Epoch 1132/5000
Epoch 1133/5000
Epoch 1134/5000
Epoch 1135/5000
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Epoch 1136/5000
Epoch 1137/5000
Epoch 1138/5000
Epoch 1139/5000
Epoch 1140/5000
Epoch 1141/5000
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Epoch 1143/5000
Epoch 1144/5000
Epoch 1145/5000
Epoch 1146/5000
Epoch 1147/5000
Epoch 1148/5000
Epoch 1149/5000
Epoch 1150/5000
Epoch 1151/5000
Epoch 1152/5000
Epoch 1153/5000
Epoch 1154/5000
Epoch 1155/5000
Epoch 1156/5000
Epoch 1157/5000
Epoch 1158/5000
Epoch 1159/5000
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Epoch 1160/5000
Epoch 1161/5000
Epoch 1162/5000
Epoch 1163/5000
Epoch 1164/5000
Epoch 1165/5000
Epoch 1166/5000
Epoch 1167/5000
Epoch 1168/5000
Epoch 1169/5000
Epoch 1170/5000
Epoch 1171/5000
Epoch 1172/5000
Epoch 1173/5000
Epoch 1174/5000
Epoch 1175/5000
Epoch 1176/5000
Epoch 1177/5000
Epoch 1178/5000
Epoch 1179/5000
Epoch 1180/5000
Epoch 1181/5000
Epoch 1182/5000
Epoch 1183/5000
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Epoch 1184/5000
Epoch 1185/5000
Epoch 1186/5000
Epoch 1187/5000
Epoch 1188/5000
Epoch 1189/5000
1/1 [=======] - Os 3ms/step - loss: 8632926.0000
Epoch 1190/5000
Epoch 1191/5000
Epoch 1192/5000
Epoch 1193/5000
Epoch 1194/5000
Epoch 1195/5000
Epoch 1196/5000
Epoch 1197/5000
Epoch 1198/5000
Epoch 1199/5000
Epoch 1200/5000
Epoch 1201/5000
Epoch 1202/5000
Epoch 1203/5000
Epoch 1204/5000
Epoch 1205/5000
Epoch 1206/5000
Epoch 1207/5000
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Epoch 1208/5000
Epoch 1209/5000
Epoch 1210/5000
Epoch 1211/5000
Epoch 1212/5000
Epoch 1213/5000
1/1 [=======] - Os 3ms/step - loss: 8632878.0000
Epoch 1214/5000
Epoch 1215/5000
Epoch 1216/5000
Epoch 1217/5000
Epoch 1218/5000
Epoch 1219/5000
Epoch 1220/5000
Epoch 1221/5000
Epoch 1222/5000
Epoch 1223/5000
Epoch 1224/5000
Epoch 1225/5000
Epoch 1226/5000
Epoch 1227/5000
Epoch 1228/5000
Epoch 1229/5000
Epoch 1230/5000
Epoch 1231/5000
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Epoch 1232/5000
Epoch 1233/5000
Epoch 1234/5000
Epoch 1235/5000
Epoch 1236/5000
Epoch 1237/5000
1/1 [========] - Os 2ms/step - loss: 8632845.0000
Epoch 1238/5000
Epoch 1239/5000
Epoch 1240/5000
Epoch 1241/5000
Epoch 1242/5000
Epoch 1243/5000
Epoch 1244/5000
Epoch 1245/5000
Epoch 1246/5000
Epoch 1247/5000
Epoch 1248/5000
Epoch 1249/5000
Epoch 1250/5000
Epoch 1251/5000
Epoch 1252/5000
Epoch 1253/5000
Epoch 1254/5000
Epoch 1255/5000
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Epoch 1256/5000
Epoch 1257/5000
Epoch 1258/5000
Epoch 1259/5000
Epoch 1260/5000
Epoch 1261/5000
Epoch 1262/5000
Epoch 1263/5000
Epoch 1264/5000
Epoch 1265/5000
Epoch 1266/5000
Epoch 1267/5000
Epoch 1268/5000
Epoch 1269/5000
Epoch 1270/5000
Epoch 1271/5000
Epoch 1272/5000
Epoch 1273/5000
Epoch 1274/5000
Epoch 1275/5000
Epoch 1276/5000
Epoch 1277/5000
Epoch 1278/5000
Epoch 1279/5000
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Epoch 1280/5000
Epoch 1281/5000
Epoch 1282/5000
Epoch 1283/5000
Epoch 1284/5000
Epoch 1285/5000
1/1 [========] - Os 4ms/step - loss: 8632781.0000
Epoch 1286/5000
Epoch 1287/5000
Epoch 1288/5000
Epoch 1289/5000
Epoch 1290/5000
Epoch 1291/5000
Epoch 1292/5000
Epoch 1293/5000
Epoch 1294/5000
Epoch 1295/5000
Epoch 1296/5000
Epoch 1297/5000
Epoch 1298/5000
Epoch 1299/5000
Epoch 1300/5000
Epoch 1301/5000
Epoch 1302/5000
Epoch 1303/5000
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Epoch 1304/5000
Epoch 1305/5000
Epoch 1306/5000
Epoch 1307/5000
Epoch 1308/5000
Epoch 1309/5000
Epoch 1310/5000
Epoch 1311/5000
Epoch 1312/5000
Epoch 1313/5000
Epoch 1314/5000
Epoch 1315/5000
Epoch 1316/5000
Epoch 1317/5000
Epoch 1318/5000
Epoch 1319/5000
Epoch 1320/5000
Epoch 1321/5000
Epoch 1322/5000
Epoch 1323/5000
Epoch 1324/5000
Epoch 1325/5000
Epoch 1326/5000
Epoch 1327/5000
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Epoch 1328/5000
Epoch 1329/5000
Epoch 1330/5000
Epoch 1331/5000
Epoch 1332/5000
Epoch 1333/5000
Epoch 1334/5000
Epoch 1335/5000
Epoch 1336/5000
Epoch 1337/5000
Epoch 1338/5000
Epoch 1339/5000
Epoch 1340/5000
Epoch 1341/5000
Epoch 1342/5000
Epoch 1343/5000
Epoch 1344/5000
Epoch 1345/5000
Epoch 1346/5000
Epoch 1347/5000
Epoch 1348/5000
Epoch 1349/5000
Epoch 1350/5000
Epoch 1351/5000
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Epoch 1352/5000
Epoch 1353/5000
Epoch 1354/5000
Epoch 1355/5000
Epoch 1356/5000
Epoch 1357/5000
Epoch 1358/5000
Epoch 1359/5000
Epoch 1360/5000
Epoch 1361/5000
Epoch 1362/5000
Epoch 1363/5000
Epoch 1364/5000
Epoch 1365/5000
Epoch 1366/5000
Epoch 1367/5000
Epoch 1368/5000
Epoch 1369/5000
Epoch 1370/5000
Epoch 1371/5000
Epoch 1372/5000
Epoch 1373/5000
Epoch 1374/5000
Epoch 1375/5000
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Epoch 1376/5000
Epoch 1377/5000
Epoch 1378/5000
Epoch 1379/5000
Epoch 1380/5000
Epoch 1381/5000
Epoch 1382/5000
Epoch 1383/5000
Epoch 1384/5000
Epoch 1385/5000
Epoch 1386/5000
Epoch 1387/5000
Epoch 1388/5000
Epoch 1389/5000
Epoch 1390/5000
Epoch 1391/5000
Epoch 1392/5000
Epoch 1393/5000
Epoch 1394/5000
Epoch 1395/5000
Epoch 1396/5000
Epoch 1397/5000
Epoch 1398/5000
Epoch 1399/5000
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Epoch 1400/5000
Epoch 1401/5000
Epoch 1402/5000
Epoch 1403/5000
Epoch 1404/5000
Epoch 1405/5000
1/1 [=======] - Os 3ms/step - loss: 8632702.0000
Epoch 1406/5000
Epoch 1407/5000
Epoch 1408/5000
Epoch 1409/5000
Epoch 1410/5000
Epoch 1411/5000
1/1 [============= ] - Os 3ms/step - loss: 8632705.0000
Epoch 1412/5000
Epoch 1413/5000
Epoch 1414/5000
Epoch 1415/5000
Epoch 1416/5000
Epoch 1417/5000
Epoch 1418/5000
Epoch 1419/5000
Epoch 1420/5000
Epoch 1421/5000
Epoch 1422/5000
Epoch 1423/5000
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Epoch 1424/5000
Epoch 1425/5000
Epoch 1426/5000
Epoch 1427/5000
Epoch 1428/5000
Epoch 1429/5000
1/1 [========] - Os 3ms/step - loss: 8632693.0000
Epoch 1430/5000
Epoch 1431/5000
Epoch 1432/5000
Epoch 1433/5000
Epoch 1434/5000
Epoch 1435/5000
Epoch 1436/5000
Epoch 1437/5000
Epoch 1438/5000
Epoch 1439/5000
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Epoch 1441/5000
Epoch 1442/5000
Epoch 1443/5000
Epoch 1444/5000
Epoch 1445/5000
Epoch 1446/5000
Epoch 1447/5000
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Epoch 1448/5000
Epoch 1449/5000
Epoch 1450/5000
Epoch 1451/5000
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Epoch 1456/5000
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Epoch 1461/5000
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Epoch 1464/5000
Epoch 1465/5000
Epoch 1466/5000
Epoch 1467/5000
Epoch 1468/5000
Epoch 1469/5000
Epoch 1470/5000
Epoch 1471/5000
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Epoch 1472/5000
Epoch 1473/5000
Epoch 1474/5000
Epoch 1475/5000
Epoch 1476/5000
Epoch 1477/5000
1/1 [=======] - Os 4ms/step - loss: 8632679.0000
Epoch 1478/5000
Epoch 1479/5000
Epoch 1480/5000
Epoch 1481/5000
Epoch 1482/5000
Epoch 1483/5000
Epoch 1484/5000
Epoch 1485/5000
Epoch 1486/5000
Epoch 1487/5000
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Epoch 1489/5000
Epoch 1490/5000
Epoch 1491/5000
Epoch 1492/5000
Epoch 1493/5000
Epoch 1494/5000
Epoch 1495/5000
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Epoch 1496/5000
Epoch 1497/5000
Epoch 1498/5000
Epoch 1499/5000
Epoch 1500/5000
Epoch 1501/5000
Epoch 1502/5000
Epoch 1503/5000
Epoch 1504/5000
Epoch 1505/5000
Epoch 1506/5000
Epoch 1507/5000
Epoch 1508/5000
Epoch 1509/5000
Epoch 1510/5000
Epoch 1511/5000
Epoch 1512/5000
Epoch 1513/5000
Epoch 1514/5000
Epoch 1515/5000
Epoch 1516/5000
Epoch 1517/5000
Epoch 1518/5000
Epoch 1519/5000
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Epoch 1520/5000
Epoch 1521/5000
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Epoch 1523/5000
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Epoch 1534/5000
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Epoch 1536/5000
Epoch 1537/5000
Epoch 1538/5000
Epoch 1539/5000
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1/1 [=========== ] - Os 10ms/step - loss: 8632657.0000
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1/1 [========] - Os 3ms/step - loss: 8632657.0000
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