

# random search with gcn layer

adam\_mse\_gcnconv\_poolMaxAggr\_2fc

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```
sweep_configuration = {
    'method': 'random',
    'metric': {'goal': 'minimize', 'name': 'val_loss'},
    'parameters': {'batch_size': {'distribution': 'q_log_uniform_values',
                                   'max': 256,
                                   'min': 16,
                                   'q': 8},
                    'criterion': {'value': 'MSELoss()'},
                    'epochs': {'values': [20, 40, 60, 80]},
                    'hidden_dim_1': {'value': 64},
                    'hidden_dim_2': {'value': 128},
                    'hidden_dim_3': {'value': 32},
                    'in_channels': {'value': 11},
                    'lr': {'distribution': 'uniform',
                           'max': 0.1,
                           'min': 0},
                    'optimizer': {'value': 'adam'},
                    'out_channels': {'value': 1}
    }
}
```

```
class GCN(torch.nn.Module):
    def __init__(self, in_channels, hidden_dim_1, hidden_dim_2, hidden_dim_3):
        super().__init__()
        self.conv1 = GCNConv(in_channels, hidden_dim_1)
        self.conv2 = GCNConv(hidden_dim_1, hidden_dim_2)
        self.global_pool = aggr.MaxAggregation()
        self.fc1 = nn.Linear(hidden_dim_2, hidden_dim_3)
```

```

self.fc2 = nn.Linear(hidden_dim_3, out_channels)

def forward(self, data):
    x, edge_index, edge_attr, batch = data.x, data.edge_index, data.edge_attr, data.batch
    x = self.conv1(x, edge_index)
    x = F.relu(x)
    x = F.dropout(x, training=self.training)
    x = self.conv2(x, edge_index)
    x = F.relu(x)
    x = self.global_pool(x, batch)
    x = self.fc1(x).relu()
    x = self.fc2(x)
    return x

```

## ▼ Section 1



## test\_loss

giddy-sweep-10 Sweep: vcvqketm 1

sage-sweep-9 Sweep: vcvqketm 1

exalted-sweep-8 Sweep: vcvqketm 1

treasured-sweep-7 Sweep: vcvqketm 1

vague-sweep-6 Sweep: vcvqketm 1

driven-sweep-5 Sweep: vcvqketm 1

golden-sweep-4 Sweep: vcvqketm 1

peachy-sweep-3 Sweep: vcvqketm 1

polar-sweep-2 Sweep: vcvqketm 1

Parameter importance with respect to

||| val\_loss



Q Search

Parameters



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Config parameter

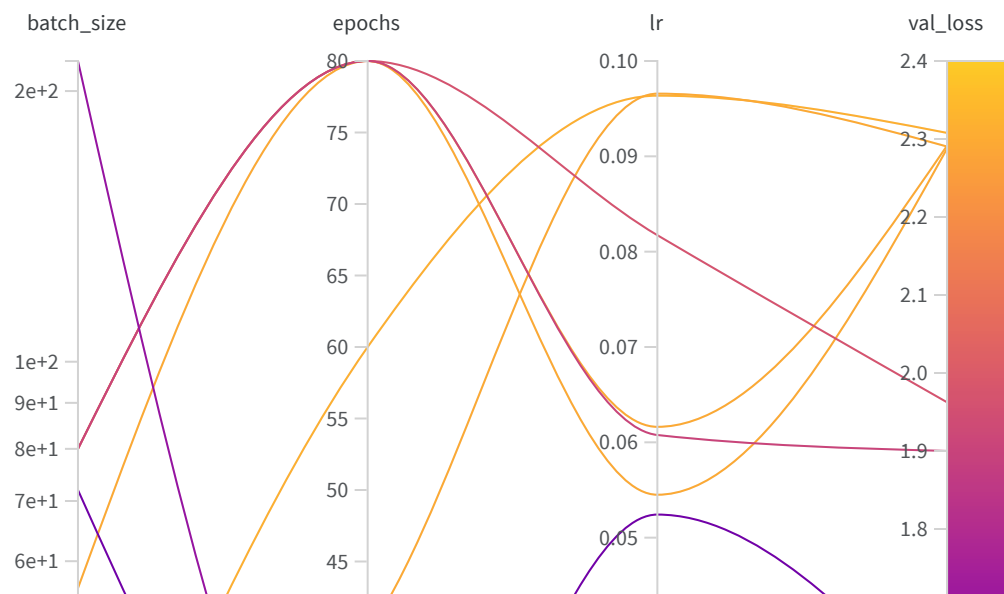
Importance ⓘ ↓

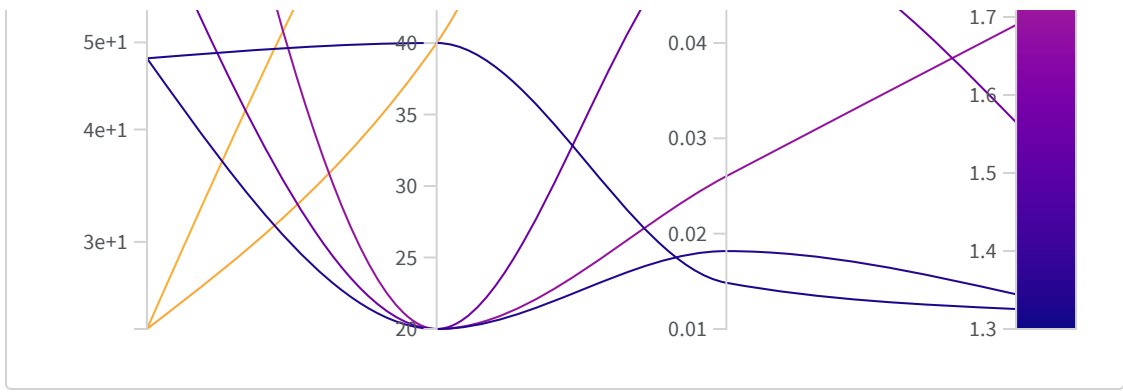
Correlation

lr

Runtime

epochs





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[https://wandb.ai/ntuwb/adam\\_mse\\_gcnconv\\_poolMaxAggr\\_2fc\\_wandb\\_random/reports/random-search-with-gcn-layer--Vmlldzo0NDUwNTE1?accessToken=0ox6bz6b3lazg32jtd1iagjncmjhndv4rycdoxlmbmtzp32xzol6fxvdq7d9glao](https://wandb.ai/ntuwb/adam_mse_gcnconv_poolMaxAggr_2fc_wandb_random/reports/random-search-with-gcn-layer--Vmlldzo0NDUwNTE1?accessToken=0ox6bz6b3lazg32jtd1iagjncmjhndv4rycdoxlmbmtzp32xzol6fxvdq7d9glao)