A typical workflow of solving a deep learning / machine learning problem:

Performance Metrics → Selecting appropriate evaluation criteria

Default baseline methods → Selecting most simple and intuitive model, also some unsupervised pretraining can be utilized.

Determining whether to get more data → when we get pretty good training performance but bad test accuracy.

selecting hyper-parameters

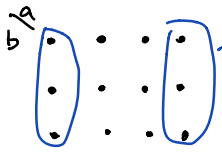
Manually selection (A form of model representation capacity and hyper-parameters' relationship)

Automatically selection (Yields new hyper-parameters but easier to explore)

Grid / Random Search

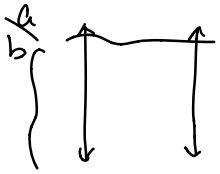
- Both of them can be used repeatly by modifying scale and zoom in
- Random Search based on sampling, grid search is used for listing all the candidates.

Grid Search



→ if result(a_1) = result(a_2), then we do the same exploration twice

Random Search



→ Even if result(a_1) = result(a_2), we do two different exploration due to sampling process.

- Model based hyper-parameter optimization (using models to optimize)

Debugging Strategies (some tips for debugging)