1. Tìm hiểu, so sánh các phương pháp Optimizer trong huấn luyện mô hình học máy

What is optimizer in machine learning:

Optimizers are algorithm to adjust the parameter in machine learning during training to minimize the loss function and maximum the predicted accuracy of machine learning models. Optimizers method helps improve the machine learning models performance.

Some optimizers:

Gradient Descent:

Advantages: Works best for most purpose.

Disadvantages: Expensive to calculate the gradients if data size is too huge. Work well for convex function but doesn’t know how far to travel along the gradients for non convex function

* Stochastic (SGD): common
* Stochastic with Momentum
* Mini Batch

Adagrad

RMS Prop: common

AdaDelta

Adam: common

|  |  |
| --- | --- |
| **Optimizer** |  |
| Gradient Descent |  |
| Stochastic Gradient Descent |  |
| Stochastic Gradient Descent with Momentum |  |
| Mini Batch Gradient Descent |  |
| Adagrad |  |
| RMS Prop |  |
| AdaDelta |  |
| Adam |  |