OneNote for Windows 10

Home Insert Draw View Help

Shapes Ink to Shape Ink to Text

100 Days of ML

Day 34 - Working...
Day 35 - Complete...
Day 36 - Handling...
Day 37 - Handling...
Day38-Missing Indi...
Day39 - KNN Impu...
Day40 - Iterative I...
Day 41 - Outliers in...
Day 42 - Outlier De...
Day 43 - Outlier de...
Day44 - Outlier De...
Day 45 - Feature C...
Day 46 - Curse of...
Day 47 - PCA
Day 48 - Simple Li...
Day 49 - Regressio...
Day 50 - Multiple L...
Day 51 - Gradient...
Day 52 - Types of...

Add section

Types of Gradient Descent
Batch GD
The Problem with Batch GD
Stochastic GD
Code
Time Comparison
Visualizations
Learning Schedules
When to use Stochastic GD

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The Problem with Batch GD

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$n = 100000 \rightarrow 10^5$

col $\rightarrow 5 \rightarrow$ ~~6 coefs~~ 10^2

epoch $\rightarrow 50 \rightarrow 10^3$ 6

total $\rightarrow 10^{10}$ → slow on big data

1) 50
1 → 1000
6 → 6000

→ Deep Learning
→ CNN → images
→ RNN → text

2) Hardware

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Stochastic GD

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5, 10

100 epochs

Batch

Stochastic → row → update

n rows

1 epoch

n updates

faster

faster convergence

1 epoch

1 update

→ random

Stochastic

steady soln

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- Sklearn Implementation

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When to use Stochastic GD

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1) Big data ⟶ sgd

2) Non convex function