



**High Performance Machine Learning
for
The Data Driven Enterprise**

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What's next?

SKYTREE

- AI Automation
- Self-tuning Algorithms
- Massive Computational Search
- **Machine|Human**

- Optimization
- Predictive
- Statistical
- Exploratory
- **Human|Machine**

- Reports
- Queries
- Alerts
- **Human**

Past:
Basic
Analytics

Present:
Advanced
Analytics

Future:
Auto-ML

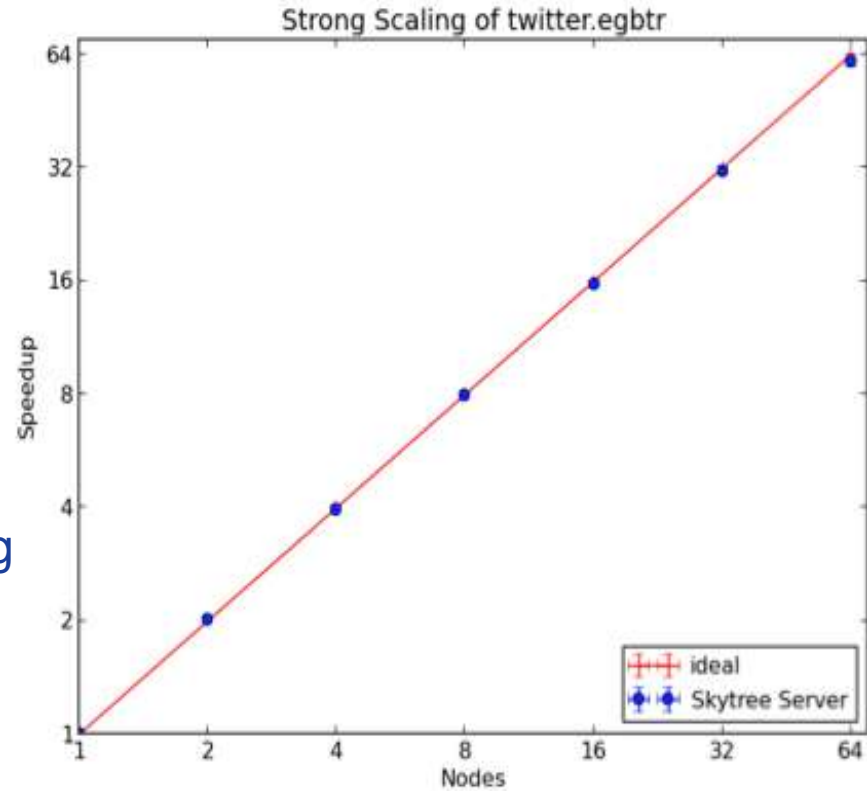
Scale: Multiple Machines for Higher Performance

Strong scaling*

Data:

- 64 nodes (1024 cores)

*Skytree also supports weak scaling



Nodes N	Cores	Speedup (ideal)	Mean Speedup μ (Skytree Server)	Standard Deviation σ
1	16	1	1.00013	0.0122826
2	32	2	2.00665	0.00644421
4	64	4	3.95269	0.00432337
8	128	8	7.9136	0.0296349
16	256	16	15.6988	0.128573
32	512	32	31.2751	0.110139
64	1024	64	61.1329	0.867193

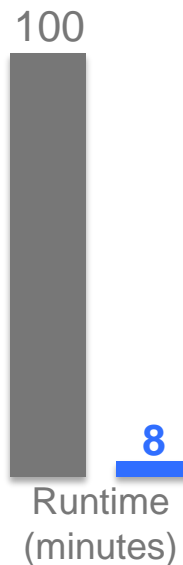
Speed – Scale – Accuracy = Competitive Advantage

Micro Targeting – Find New Customers

- *Global 100 Financial Institution*
- Major Pain points: Speed & Accuracy of Current approach

CURRENT:

1,200 Cores @ 100 Node
Hadoop Cluster
Runtime: 100 Minutes
Accuracy (Gini): 57%



SKYTREE SERVER:

12 Cores @ 1 Node
1250x speedup
Runtime: 8 Minutes
Accuracy (Gini): 60%

Skytree Server

Common Machine Learning Use Cases

Predictions

Anomaly Discovery

Recommendations

Tasks

Classification

Regression

Clustering

Density Estimation

Dimension Reduction

Multi-dimensional Querying

Machine Learning Methods

Broadest number and variety of advanced methods supported for predictive accuracy

Algorithms – Skytree's Technology Breakthrough

Skytree has invented ways to reduce the complexity of ML methods from $O(N^2)$ and $O(N^3)$ to $O(N)$ or $O(N \log N)$

Distributed

Predictive Accuracy
= Business Value

Streaming

Ease of Use

Breadth of Advanced Methods

Speed and Scalability

**SAME DATA.
BETTER RESULTS.**



SKYTREE[®]
THE MACHINE LEARNING COMPANY

Thank you.