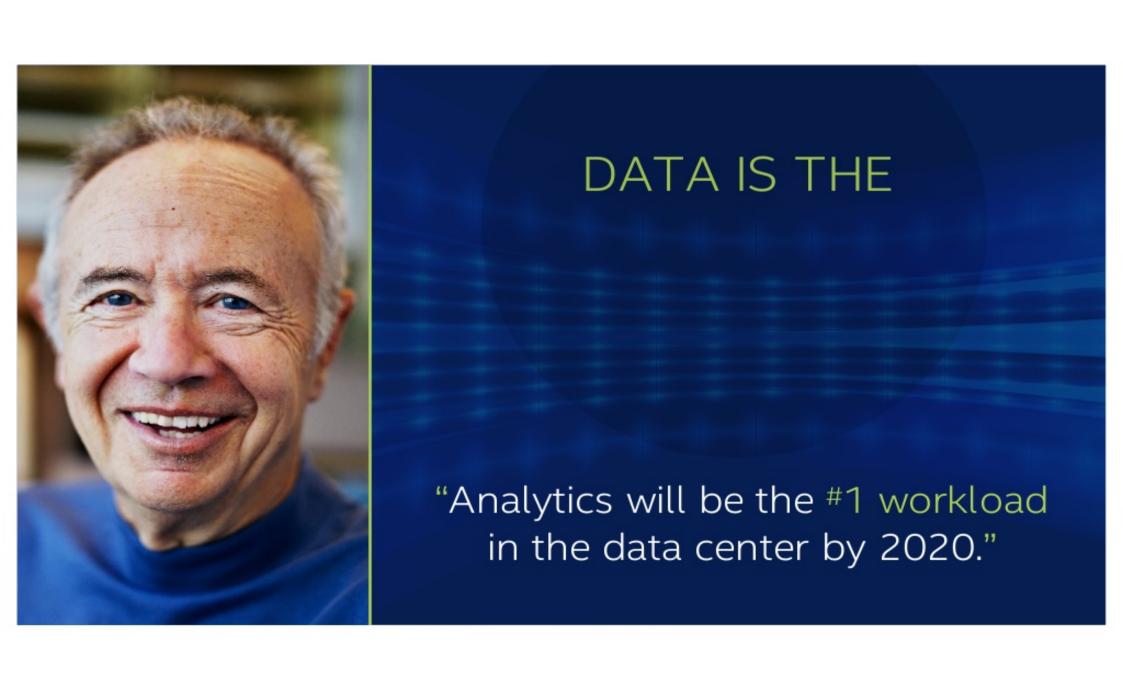


Pedal to the Metal: Accelerating Spark* with Silicon Innovation

Ziya Ma Intel Corporation



THE MULTI LAYER VISION

APPLICATIONS

ANALYTICS PLATFORM

DATA PLATFORM

INFRASTRUCTURE











Machine Learning
Multi-layered, fully-optimized algorithms

ACCELERATE SPARK* WITH SILICON INNOVATION

INTEL® XEON® + FPGA

2X lower latency

2X higher bandwidth

3D XPOINT™ DIMMS NEW CLASS OF NON-VOLATILE MEMORY

4X memory capacity

1/2 the cost of DDR

INTEL® OMNI-PATH ARCHITECTURE

10% performance advantage

60% lower system power

20% system cost savings

Other names and brands may be claimed as the property of others

HARDWARE OPTIMIZATION FOR PERFORMANCE IMPROVEMENT

7X for Spark* thru hardware migration

2X2 for MLlib* thru Intel Math Kernel Library

1.7X3 Spark thru hierarchical storage

1.35X⁴ Spark shuffle RPC encryption for Terasort and 1.12X for Big Bench*

OPEN SOURCE COMMITMENT

SPARK CONTRIBUTIONS

- Spark core/Tungsten*
 Graph X*
 - Spark SQL** Spark Streaming*
 - Spark R*
 Mllib*

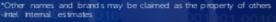
SPARK-OPTIMIZED SOFTWARE

- Trusted Analytics Platform (TAP)
 - Intel Math Kernel Library
- Intel Data Analytics Library
 - Machine Learning 10X~70 scalability,
 8X training cycle reduction

SPARK COMMUNITY SUPPORT

- Performance Benchmark
- Big Bench*
 Spark Meet-up





SPARK USE CASES

Making Solutions Easier to Deploy





















MOVING FORWARD





Enable Internet-of-Things & Cloud Analytics



Scale out Machine and Deep Learning



Optimize Machine and Deep Learning Using Hardware and Math Kernels



Thank You

Software.intel.com/bigdata

Intel booth: G3

