Dell EMC @ HPC on Wall St

Ed Turkel

HPC Strategist
ed_turkel@dellteam.com

Transforming the business

Digital Transformation

IT Transformation

Workforce Transformation

Security Transformation

Domain Experience & Expertise

Strategic Partnerships

Technology Innovations

HPC Innovation Lab

Dedicated HPC Sales & Soln. Architects

HPC

Data Analytics

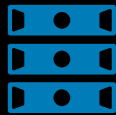**Business Apps**

Software Defined Infrastructure

Hybrid Cloud

Dell Workstations

Dell EMC Servers

Dell EMC Storage

Dell EMC Networking

Management

Services

VMware

DELLEMC

The future of AI is now

Why is AI so hot right now? A perfect storm that's driving demand among universities, enterprises, and startups.

AI **Breakthroughs**

We can now **train machines** to use data to sense, learn, reason, make predictions and evolve.

Computing **Power**

Hundreds of servers now power algorithms, processing in real time, facilitating quick identification of trends and patterns.

More **Data**

There is increased **data available to fuel AI** — with more being generated every second.

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Machine / deep learning and AI use cases

Media and Internet	Medicine and healthcare	Financial Services	Media and entertainment	Security and defense	Autonomous vehicles
Image/video classification	Cancer detection	Fraud detection	Video captioning	Face recognition	Pedestrian detection
Speech recognition	Diabetic grading	Risk assessment and compliance	Content-based search	Video surveillance	Lane tracking
Language translation	Chronic illness prediction	Claims processing	Real time translation	Cyber security	Traffic sign
Language processing	Drug discovery	Sales and Marketing		Satellite imagery	Recognition
Sentiment analysis	Gene mutation	Credit worthiness		Event prediction	
	Aged care	Algorithmic trading		Decision support	
	Sanitation				

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Barriers to capitalizing on AI

It takes too long to catalog data: Cataloging the very large data sets used in deep learning and machine learning requires tremendous amounts of computational power

It's hard to know where to start: In order to leverage AI technology, custom solutions built on new technologies and tuned systems are required

This is an evolving space: Nobody wants to invest in something today that will be out-of-date tomorrow

Dell EMC is at the forefront of AI

Acceleration

Servers + Storage + Networks are at the core of machine and deep learning solutions.
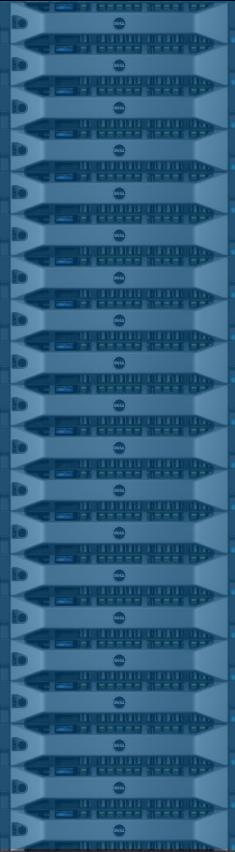
Expertise

The Dell EMC **HPC Innovation Lab** team stays on the cutting edge, helping customers keep pace with the constantly evolving landscape.

Evolution

Our solutions are based on a **scalable building block approach**, so the systems customers buy today can grow to meet their needs in the future.

Dell EMC has what you need to move forward

These reference solutions can be customized and tuned for specific workload needs

Configuration	Small	Medium - PCIe	Medium – SXM2	Large - PCIe	Large – SXM2
	Suited for use as a dedicated server to train models before deploying to production.	Suited for larger training jobs, with support for 4 GPUs.	Peer-to- peer interconnect between GPUs provides better training throughput	Suited for scaling out deep learning frameworks at a cluster level.	Peer-to- peer interconnect between GPUs provides better training throughput
Compute	1x PowerEdge C4130 server	1x PowerEdge C4130 server	1x PowerEdge C4130 server	4x PowerEdge C4130 server	4x PowerEdge C4130 server
Processor	2 x Intel Xeon E5-2690 v4	2 x Intel Xeon E5-2690 v4	2 x Intel Xeon E5-2690 v4	2 x Intel Xeon E5-2690 v4	2 x Intel Xeon E5-2690 v4
Memory	128GB DDR4 @ 2,400 MHz	256GB DDR4 @ 2,400 MHz	256GB DDR4 @ 2,400 MHz	256GB DDR4 @ 2,400 MHz	256GB DDR4 @ 2,400 MHz
Solid state drives (SSDs)	2 x 200 GB 1.8 inch SSDs	2 x 200 GB 1.8 inch SSDs	2 x 200 GB 1.8 inch SSDs	2 x 200 GB 1.8 inch SSDs	2 x 200 GB 1.8 inch SSDs
Networking	NA	NA	NA	Mellanox® InfiniBand® EDR 100Gb/s with ConnectX-4 VPI adapter card	Mellanox® InfiniBand® EDR 100Gb/s with ConnectX-4 VPI adapter card
Accelerator	**2 x NVIDIA Tesla P100 16GB PCIe**	**4 x NVIDIA Tesla P100 16GB PCIe**	**4 x NVIDIA Tesla P100 SXM2 16GB**	**4 x NVIDIA Tesla P100 16GB PCIe**	**4 x NVIDIA Tesla P100 SXM2 16GB**
Software	Bright Computing Solution for Deep Learning	Bright Computing Solution for Deep Learning	Bright Computing Solution for Deep Learning	Bright Computing Solution for Deep Learning	Bright Computing Solution for Deep Learning

Dell EMC machine learning professional services

Dell EMC understands that **deployment can represent a significant investment of time and resources**. That's why organizations of all sizes turn to Dell EMC and Dell EMC Partners to provide the services needed to succeed.

Dell EMC **Big Data Vision Workshops** are available to help you chart your course

Dell EMC **ProDeploy experts** have a proven track record of success in thousands of engagements worldwide.

Dell EMC **Remote HPC Cluster Management services** help keep machine learning and deep learning solution running smoothly with proactive monitoring and management.

Dell EMC **ProSupport** offers a single point of accountability, premium hardware and software support available 24x7 and next-business-day on-site service.

Protecting what's in your wallet

Business need

Turning 2.2B global cards 160M transactions/hour, 52B transactions / year into intelligence with 1.9M rules applied to those transactions.

Solution

MasterCard worked with Dell and Cloudera to build a secure, PCI-certified Hadoop cluster. MasterCard's Enterprise Data Hub fully conforms to the PCI-DSS V 2.0 security standards so it can host PCI datasets and integrate with other systems.

Benefits

- Understand how, when and where customers buy leading to predictive analytics

- Increased security and fraud protection via analyzing customer purchasing patterns, affinities and rhythms using machine learning

- Expand business with anonymized data re: share of wallet compared to competition, average ticket and frequency to identify marketing opportunities and measure return on investment

"Data privacy and protection is a top priority for MasterCard. As we maximize the most advanced technologies from partners and vendors, they must meet the rigorous security standards we've set."

Gary VonderHaar,
Chief Technology Officer, Architecture, MasterCard

Machine Learning Knowledge Center
Featuring the latest developments in artificial intelligence, machine learning and deep learning

http://custom.crn.com/dell-learningcenter/