



Data Center Innovation Day

**Transform your business with Artificial Intelligence
and Machine Learning**

Dennis Ang
Director , ASEAN & ANZ



GAMING



PRO VISUALIZATION



DATA CENTER/
GPU COMPUTING



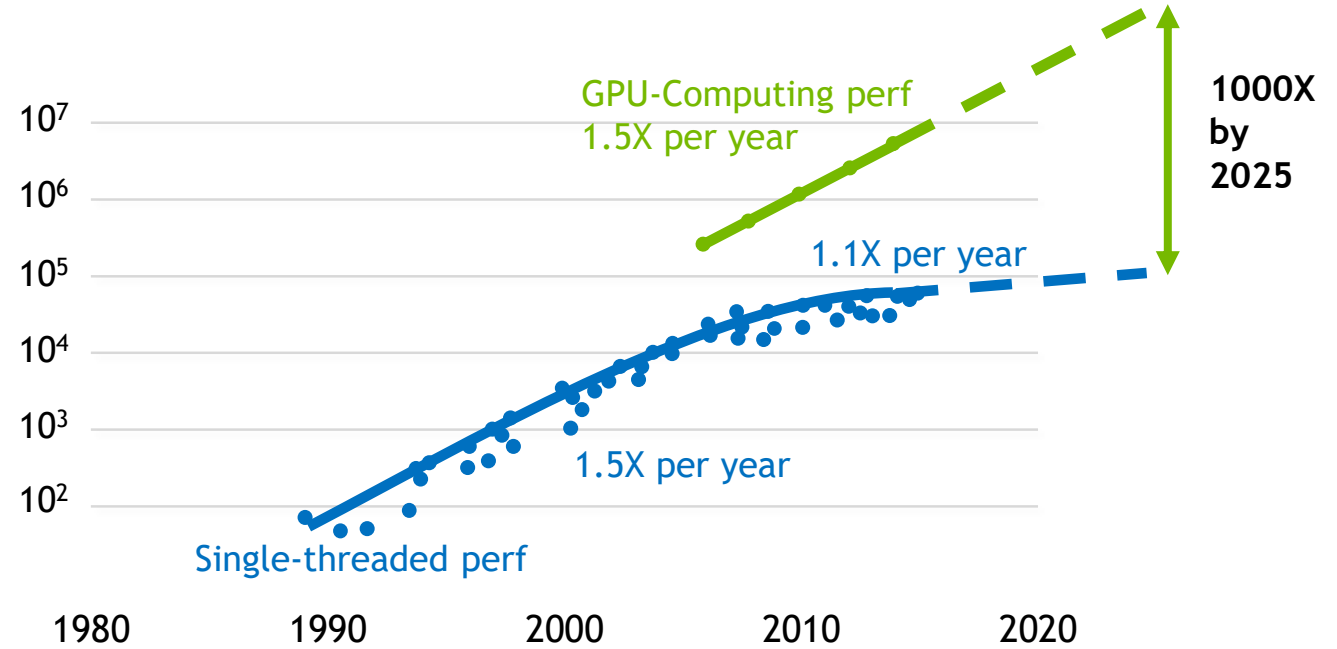
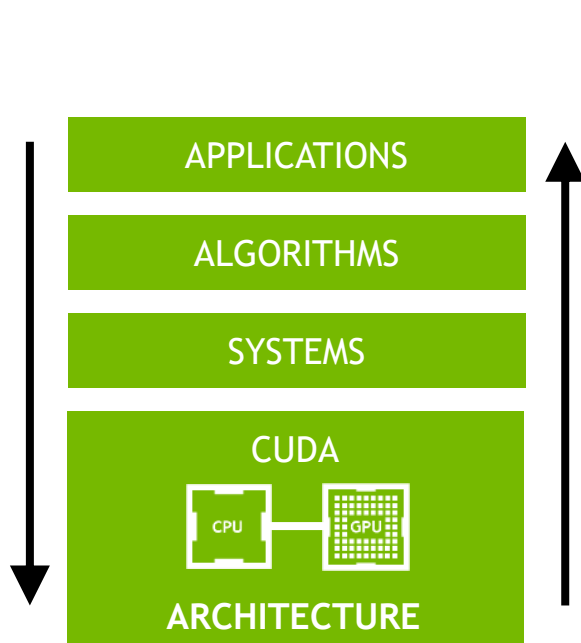
AI/DEEP LEARNING

THE WORLD LEADER IN VISUAL AND AI COMPUTING

The background features a complex network of thin, glowing green lines connecting various nodes. Some nodes are bright green, while others are a soft blue. The overall effect is a sense of interconnectedness and data flow against a dark, almost black, background.

GPU COMPUTING PLATFORM AND AI DEEP LEARNING

RISE OF GPU COMPUTING



Original data up to the year 2010 collected and plotted by M. Horowitz, F. Labonte, O. Shacham, K. Olukotun, L. Hammond, and C. Batten New plot and data collected for 2010-2015 by K. Rupp

NVIDIA DATA CENTER ACCELERATION PLATFORM

Single Platform Drives Utilization and Productivity

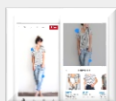
CUSTOMER USE CASES



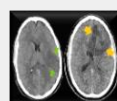
Speech



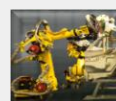
Translate



Recommender



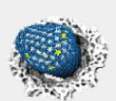
Healthcare



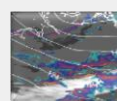
Manufacturing



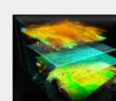
Finance



Molecular Simulations



Weather Forecasting



Seismic Mapping



Creative & Technical



Knowledge Workers

CONSUMER INTERNET & INDUSTRY APPLICATIONS

SCIENTIFIC APPLICATIONS

VIRTUAL GRAPHICS

APPS & FRAMEWORKS



python™

TensorFlow

mxnet



Chainer



ONNX

RAPIDS

PYTORCH

Amber
NAMD

+600
Applications

CATIA

Ps

AUTODESK
3DS MAX



MACHINE LEARNING

cuDF

cuML

cuGRAPH

DEEP LEARNING

cuDNN

CUTLASS

TensorRT

HPC

OpenACC

cuFFT

VIRTUAL GPU

vDWS

vPC

vAPPS

CUDA & CORE LIBRARIES - cuBLAS | NCCL

TESLA GPUs & SYSTEMS



TESLA GPU



NVIDIA DGX FAMILY



NVIDIA HGX



SYSTEM OEM



CLOUD

NVIDIA DEEP LEARNING SDK WITH DIFFERENT FRAMEWORKS

High Performance GPU-Acceleration for Deep Learning

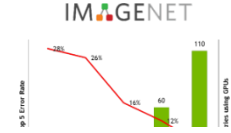



Image Classification



Object Detection

VISION



Voice Recognition



Language Translation

SPEECH



Recommendation Engines

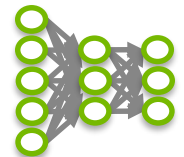


Sentiment Analysis

BEHAVIOR

Caffe Chainer DL4J Deeplearning4j Mocha.jl julia K KERAS Microsoft CNTK MatConvNet mxnet MINERVA Purine OpenDeep TensorFlow Pylearn2 theano torch

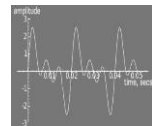
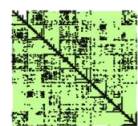

DEEP LEARNING FRAMEWORKS



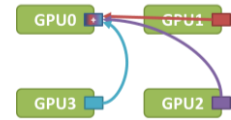
cuDNN

DEEP LEARNING

cuBLAS cuSPARSE cuFFT



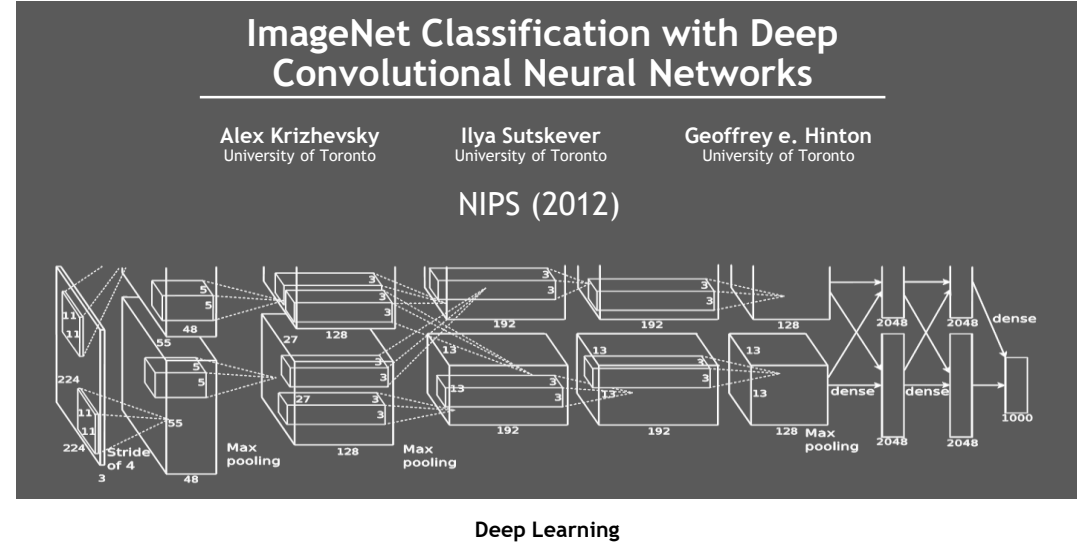
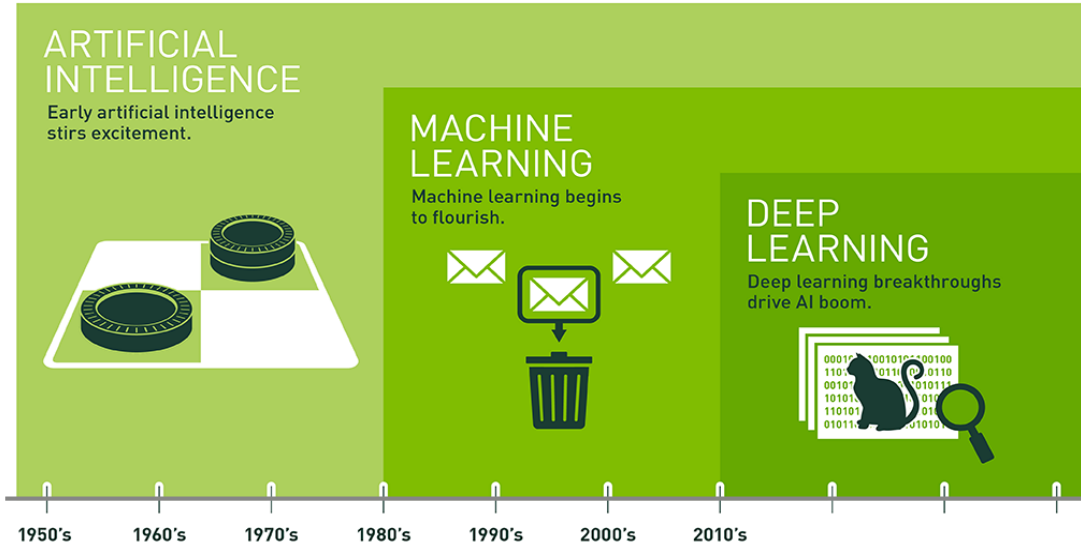
MATH LIBRARIES



NCCL

MULTI-GPU

AI AND DEEP LEARNING



AI REVOLUTION

Big Data

facebook.

350 million
images uploaded
per day

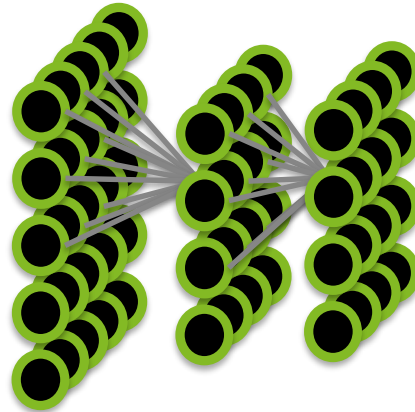
Walmart ✱

Petabytes of
customer data
hourly

You Tube

300 hours of video
uploaded every
minute

Better Algorithms



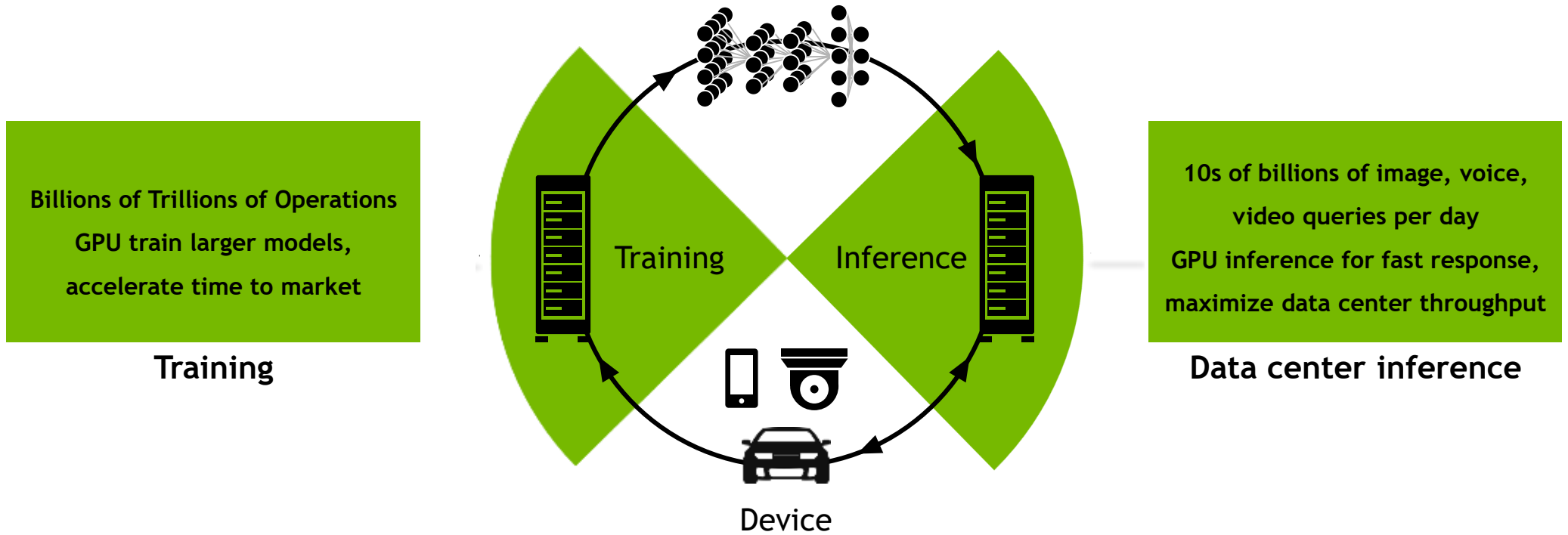
Better Compute



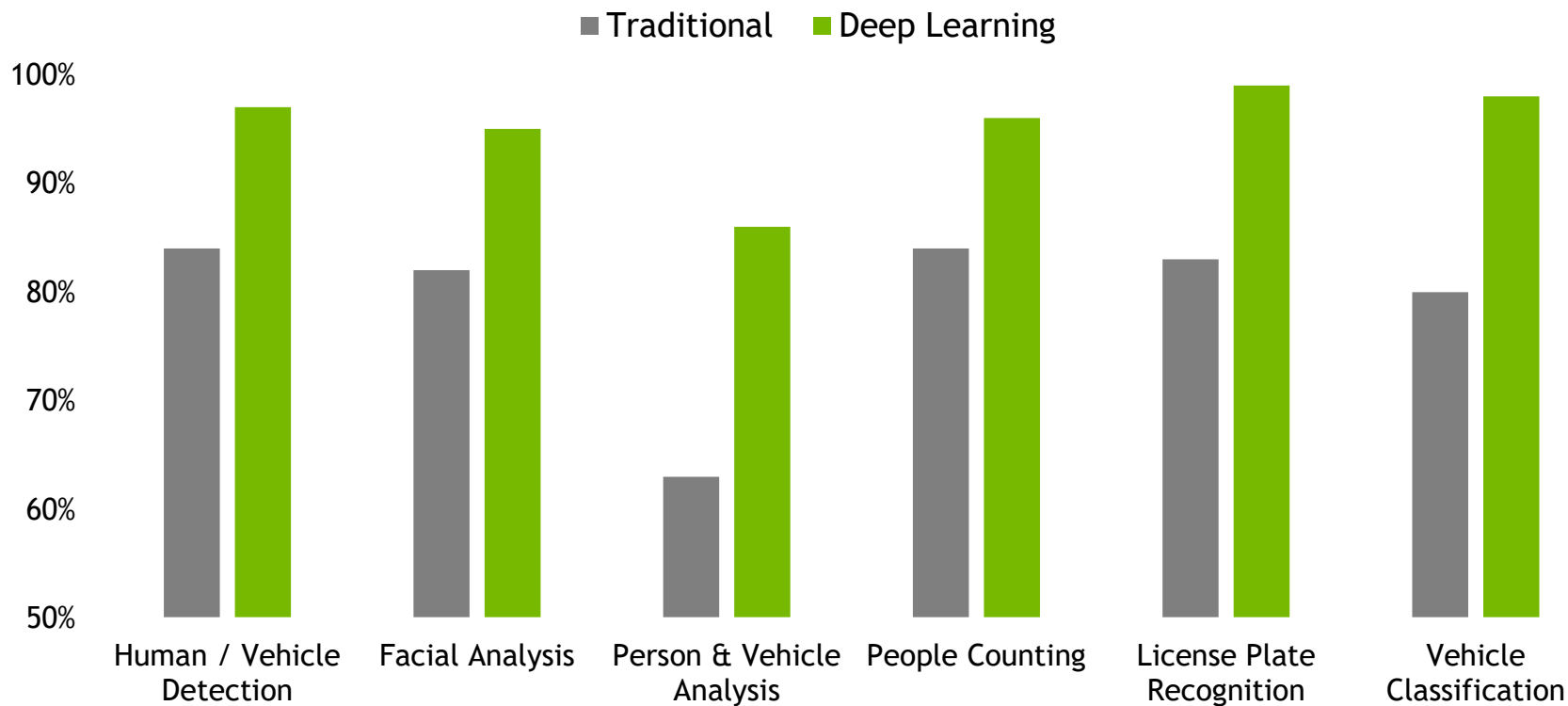
*“The Three Breakthroughs that have
Finally Unleashed A.I. on the World”*

WIRED

GPU DEEP LEARNING IS A NEW COMPUTING MODEL




HIGHER ACCURACY WITH DEEP LEARNING



AI IS DRIVING CUSTOMER ENGAGEMENT

IMAGES / VIDEO

A screenshot of a Bing image search results page. The main image shows a woman in a long, flowing, light-colored wedding dress standing in a wooded area. To the right, there are several smaller thumbnail images of similar dresses, each with a price tag and a star rating. The Bing logo is visible at the bottom of the image.



60X Better Latency for
Real-Time User Experience

SPEECH / VOICE


An illustration showing a close-up of a person's mouth as they speak. A blue speech waveform is overlaid on the image, with a microphone icon in the center. Below the illustration, the IFLYTEK logo is displayed in both Chinese and English.



20% Higher Accuracy For Better
User Experience

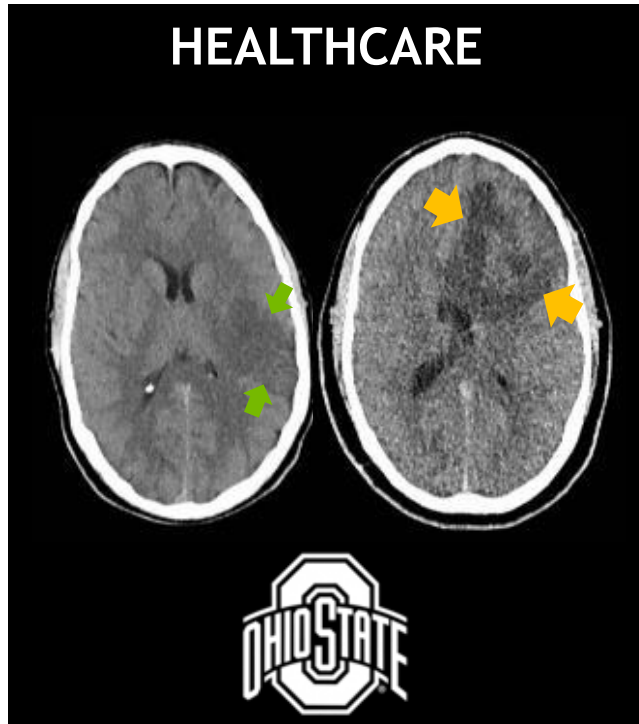
RECOMMENDATIONS

A screenshot of the Pinterest mobile app interface. It shows a user's profile page with a photo of a woman in a striped shirt and jeans. Below the photo, there are several recommended clothing items, each with a price tag and a 'Shop the look' button. The Pinterest logo is visible at the bottom of the image.

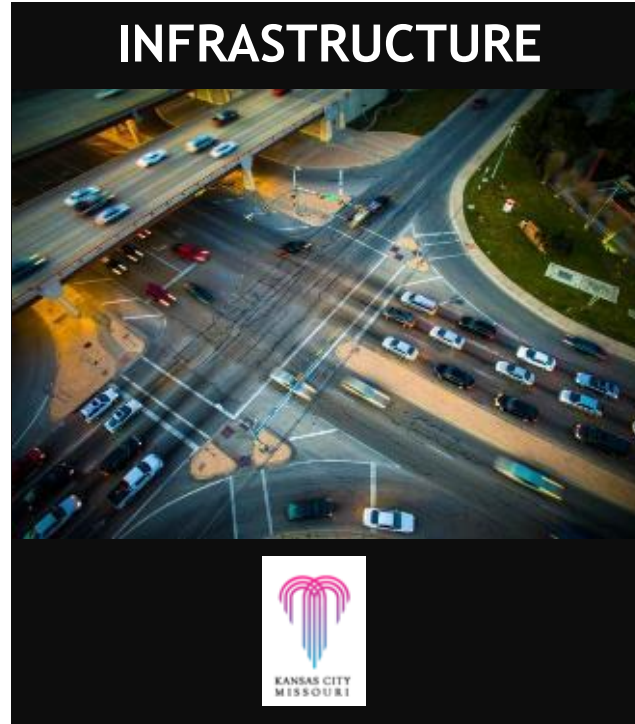


50% Improvement in
User Engagement

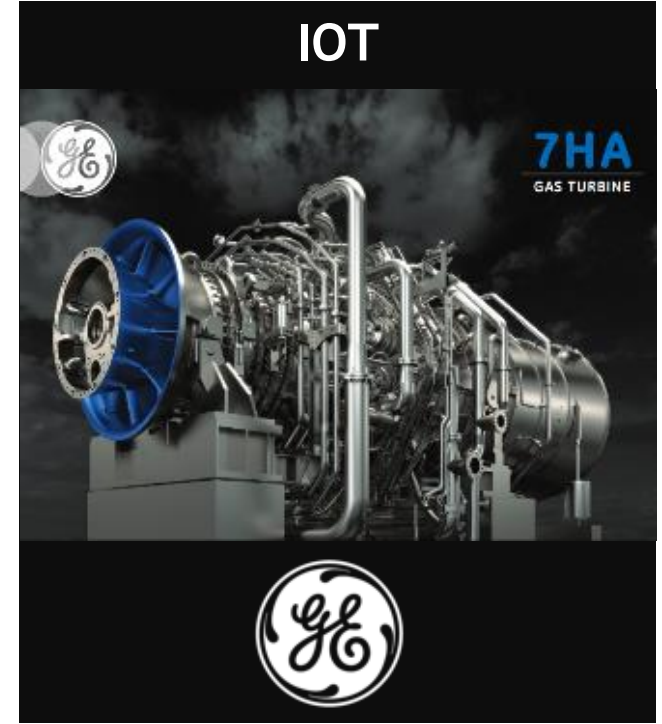
AI TRANSFORMING EVERY INDUSTRY



>80% Accuracy & Immediate Alert to Radiologists



50% Reduction in Emergency Road Repair Costs



>\$6M / Year Savings and Reduced Risk of Outage

SMART RETAILER



Popular Goods

Shopper Dwell

Shopper Path

PLATFORM BUILT FOR AI

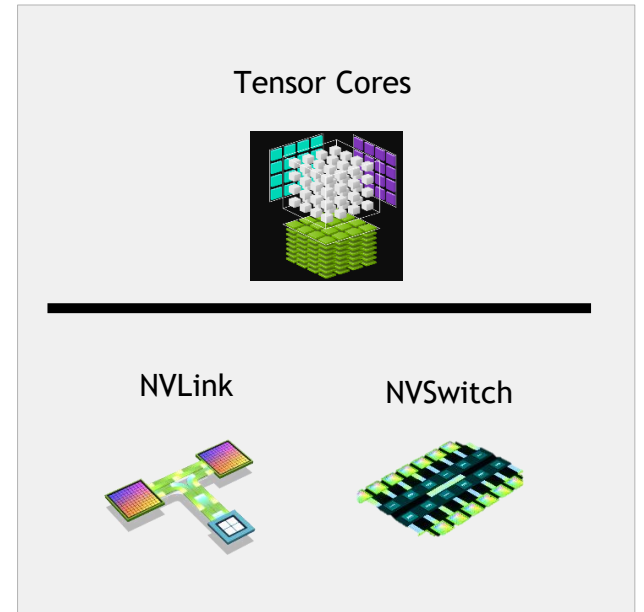
Accelerating Every Framework And Fueling Innovation



All Use-cases



All Major Frameworks



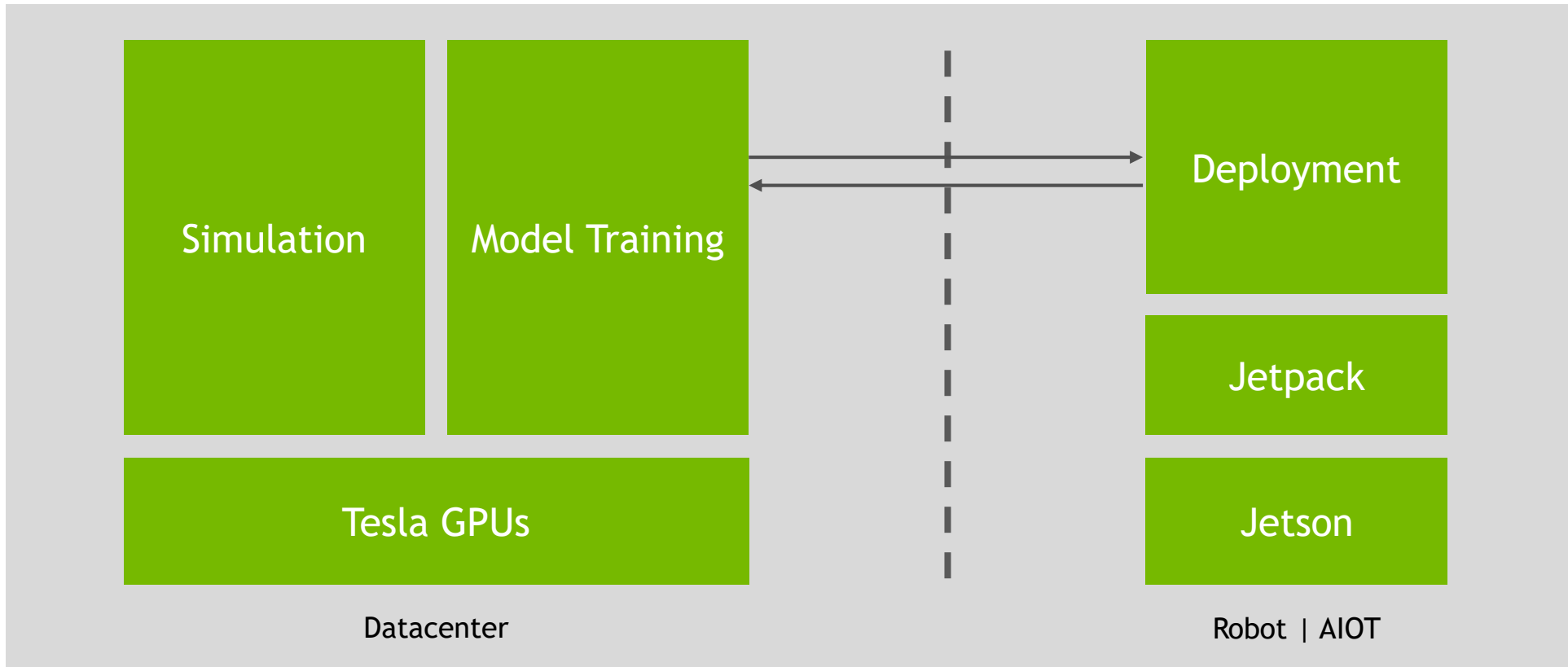
Volta Tensor Core, NVSwitch, NVLink

The background features a complex network of thin, glowing green lines connecting various nodes. The nodes are represented by small, bright green circles of varying sizes, some appearing as larger, more prominent hubs. The overall aesthetic is futuristic and technological, set against a dark, almost black background.

CISCO-NVIDIA AI PLATFORM

NVIDIA AI PLATFORM

From data center to machines



CISCO GPU ACCELERATED DATA CENTER

Virtualization

GPU-Accelerated VDI



Windows 10
Virtual Workstations

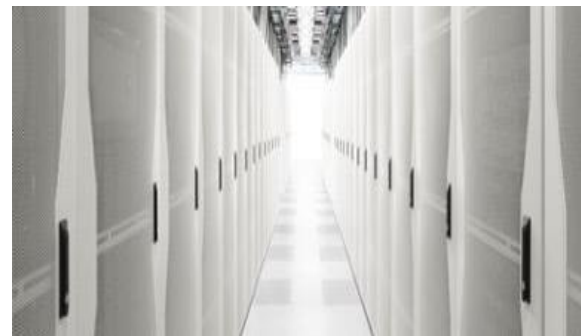


Artificial Intelligence

Deep Learning



Machine Learning & Analytics



RAPIDS



Caffe



theano

kinetica



Cisco UCS C480ML – Purpose Built Server for AI/ML/DL

Simplified Management

Cisco Intersight or UCSM/CIMC managed

Prevents Operation Silos

Extends Existing UCS
Environments with Consistent,
Cloud-Based Management

Industry leading Spec

Fully Integrated Platform Designed
to Accelerate Deep Learning

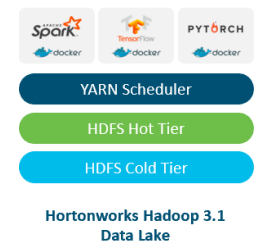
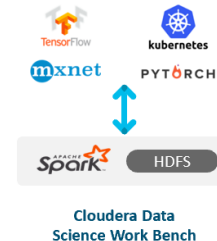
Accelerate AI/ML Projects

Validated with Popular Machine Learning Software



➤ 40,000+ CUDA Cores

Validated Solutions & Software




NVIDIA & CISCO PORTFOLIO: VIRTUALIZATION & COMPUTE

UCSM and Intersight Managed


Test & Dev and Model Training

C240




2 x V100

HyperFlex 240



2 x V100 Per Node

Option of GPU Only Nodes




C480



6 x PCIe V100

C480 ML



8x SXM2 V100 with NVLink

Inferencing & VDI

**C/HX 220
C/HX 240**



2x M10
4 x T4
6 x T4

Converged



AVAILABLE TODAY



Better Together, Customer Choice, Cisco Validated Design with Eco-system

Thank you!

