



**nVIDIA.**

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**The AI Computing Company**



# NVIDIA DEVELOPERS CONFERENCE



PUC- RJ



CPqD



UNICAP- Recife



UFG



INSPER



UFF



UFF



COPPE-UFRJ



WSCAD - Aracaju



UFU



USP- Santos



SIBGRAPI



Peru



ERAD -RS



USP



## OUR CULTURE

# A LEARNING MACHINE

NVIDIA has continuously reinvented itself over two decades.

Our invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined modern computer graphics, and revolutionized parallel computing. More recently, GPU computing ignited the era of AI.

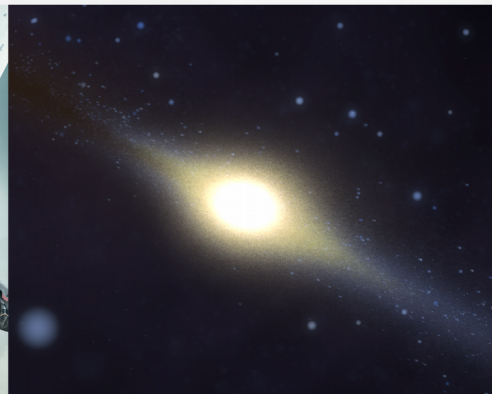
NVIDIA is a “learning machine” that constantly evolves by adapting to new opportunities that are hard to solve, that only we can tackle, and that matter to the world.

PC GRAPHICS



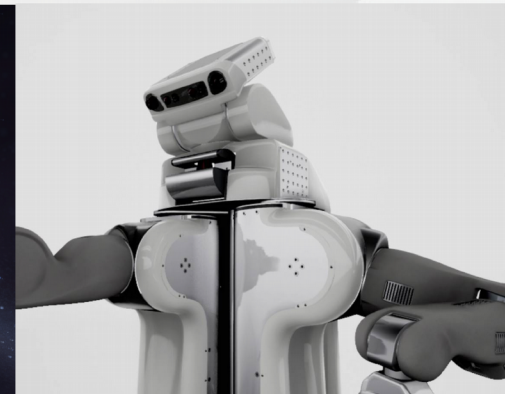
1996

GPU COMPUTING



2006

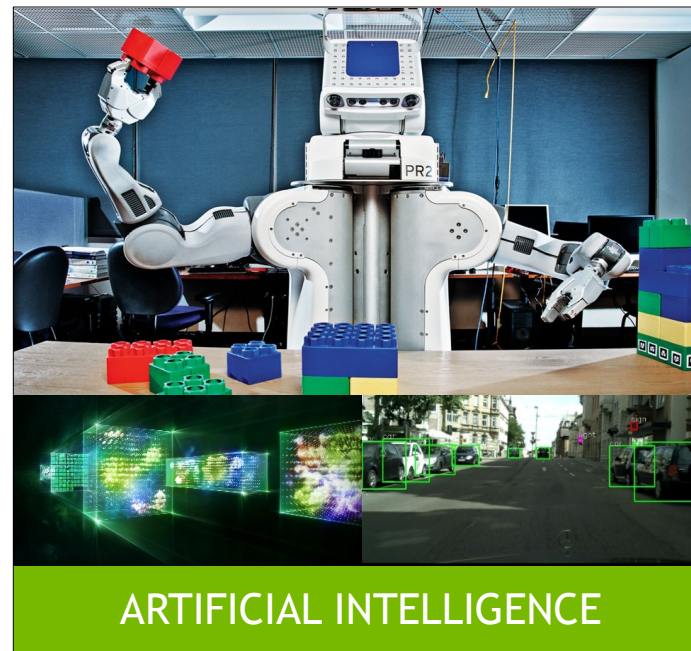
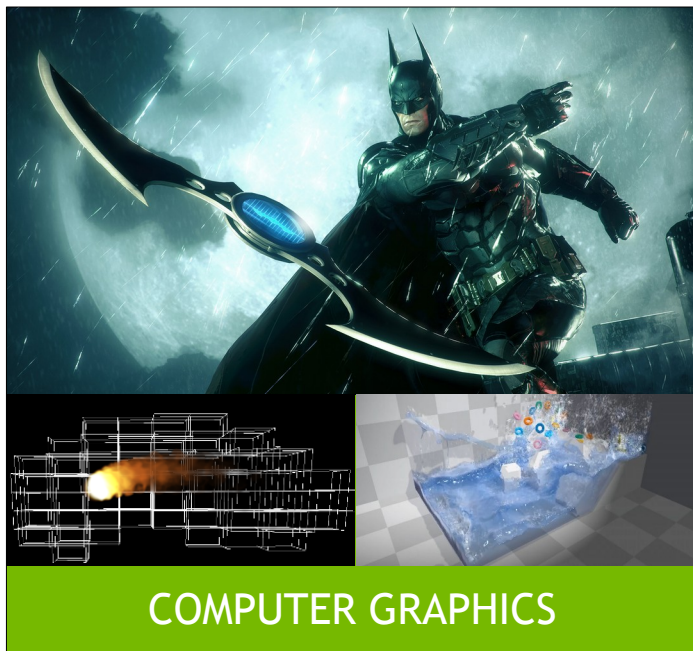
AI



2016

# NVIDIA – “THE AI COMPUTING COMPANY”

Pioneered GPU Computing | Founded 1993 | \$7B | 9,500 Employees

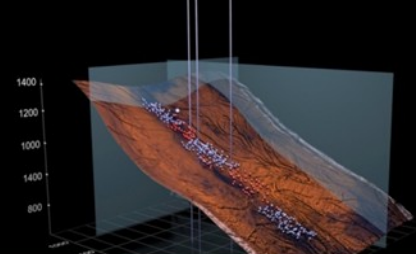
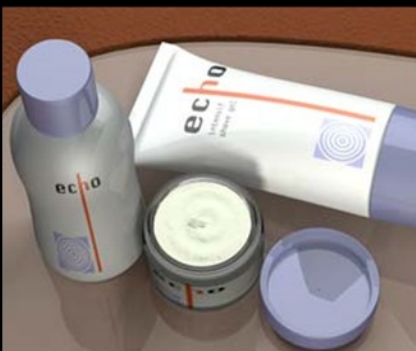






**NVIDIA QUADRO**  
**THE CHOICE OF PROFESSIONALS**

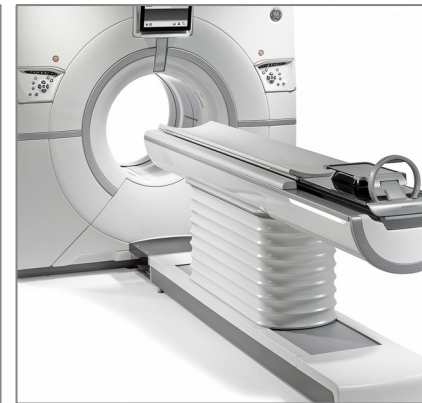
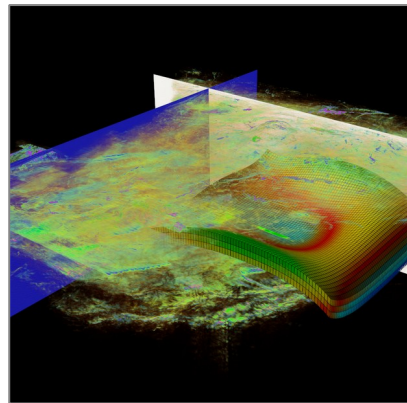




**NVIDIA QUADRO: #1 CHOICE OF PROFESSIONALS**



# QUADRO VISUAL COMPUTING PLATFORM



End Users



Developers



Developers



Mobile Solutions



Desktop Solutions

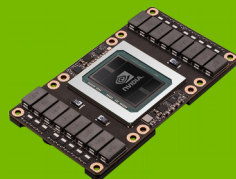


Quadro VCA



GRID

QUADRO GPU

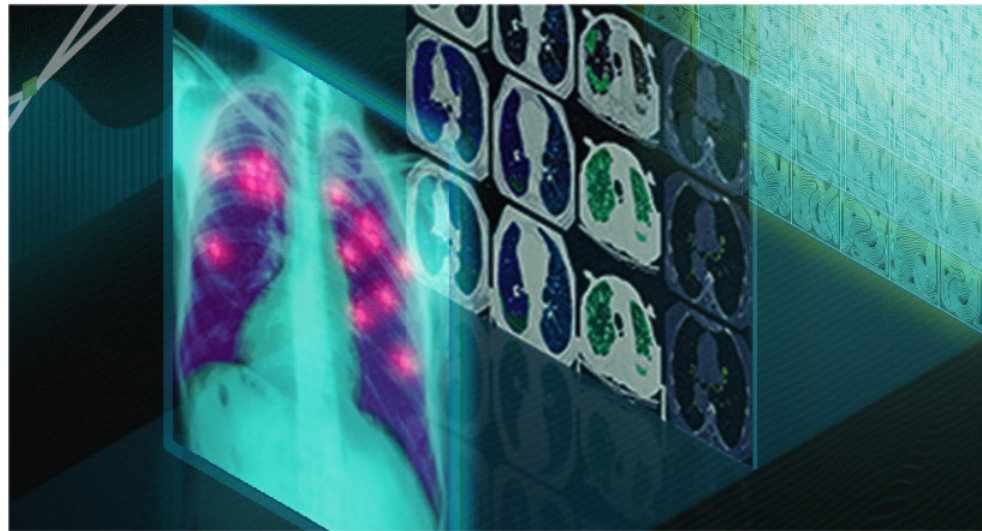


# GP100: DEEP LEARNING

## GP100: Workstation Deep Learning Engine

### Key features for Deep Learning Development:

- **Performance:** Over 20 TFLOPs of FP16 performance. Develop high-performance algorithms on GP100 equipped workstations.
- **NVLink** - provides a workstation platform for NVLink development
- **NVIDIA Deep Learning Developer Support** - access to NVIDIA GPU accelerated deep learning frameworks and the NVIDIA Deep Learning SDK





# ENTERPRISE VIRTUALIZATION



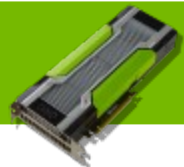
# NVIDIA GRID SOLUTION

Centralized virtual graphics capabilities for the enterprise

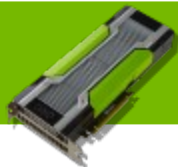
Support, Updates & Maintenance



NVIDIA GRID Software

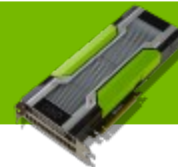


P100



P40

NVIDIA Tesla (Datacenter GPU)



P4

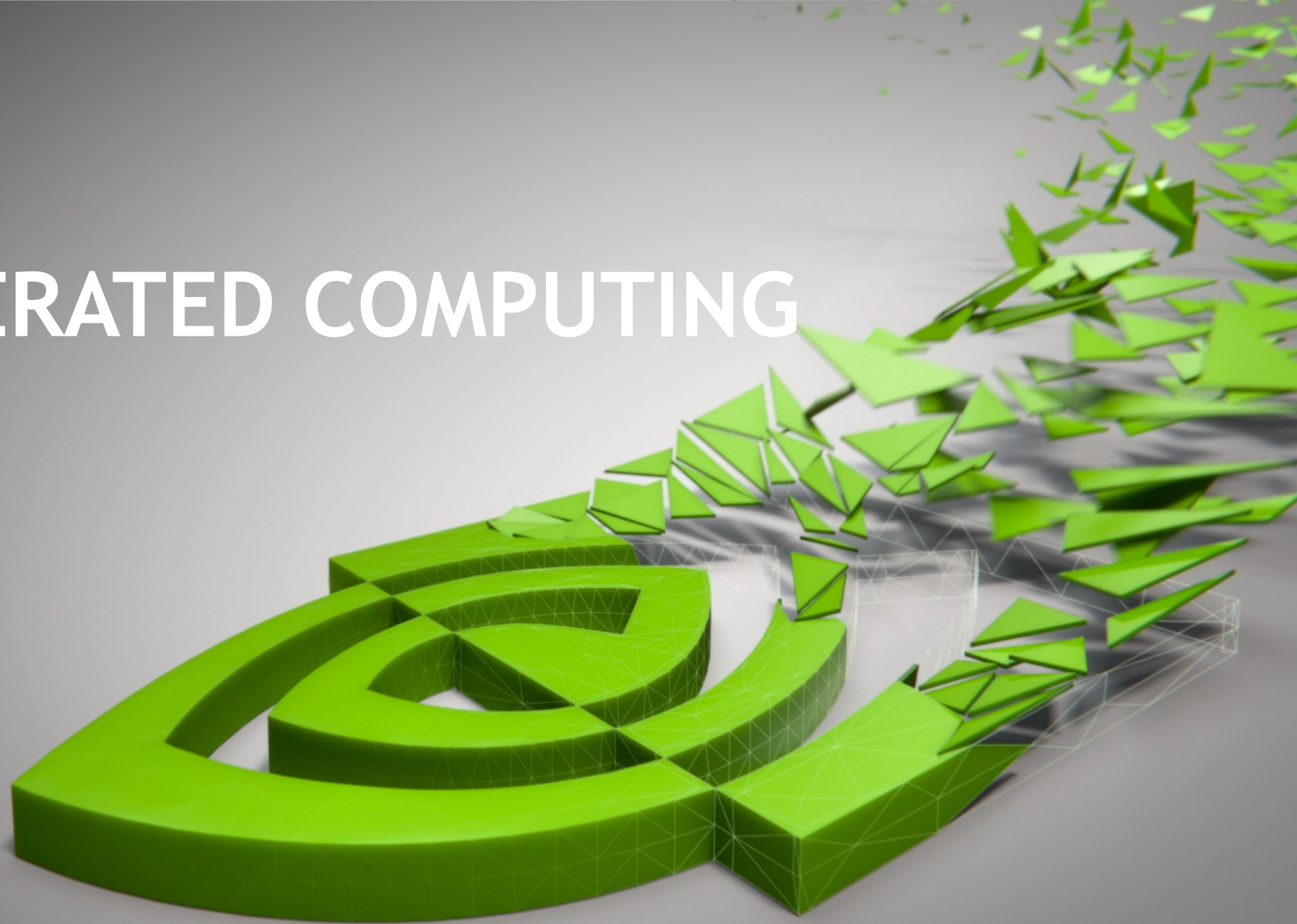


P6



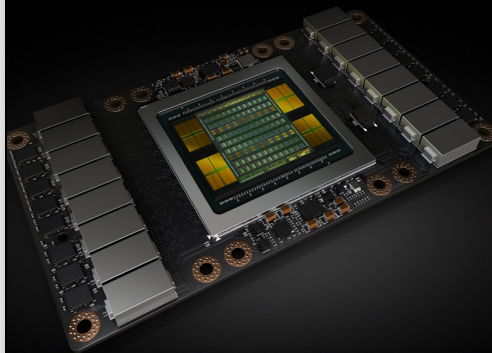
# TESLA

# ACCELERATED COMPUTING



# VOLTA TAKING OFF

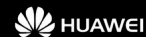
21B xtors | 5,120 CUDA cores  
15.7 FP32 | 7.8 FP64 TFLOPS  
125 Tensor TFLOPS



Volta in Production



Every Cloud



Every Computer Maker

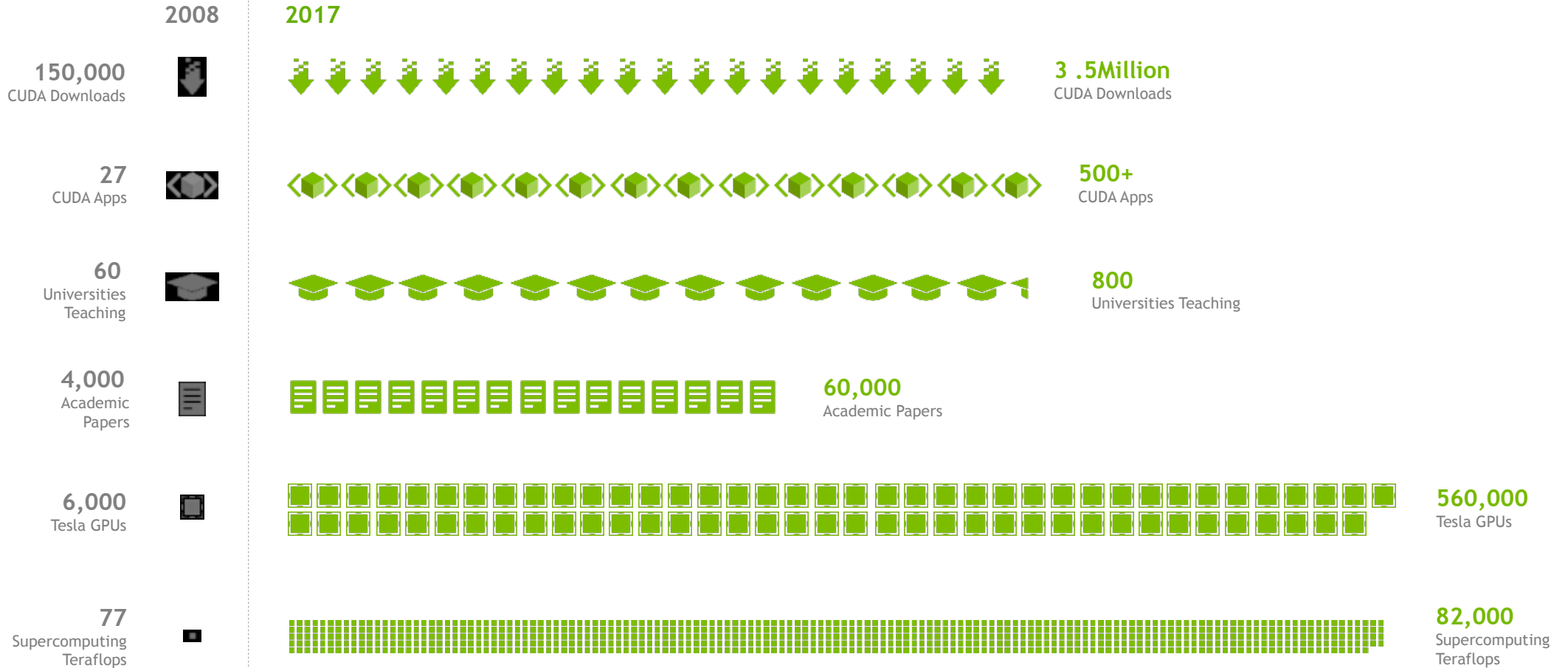


World's Most Powerful  
AI Supercomputers

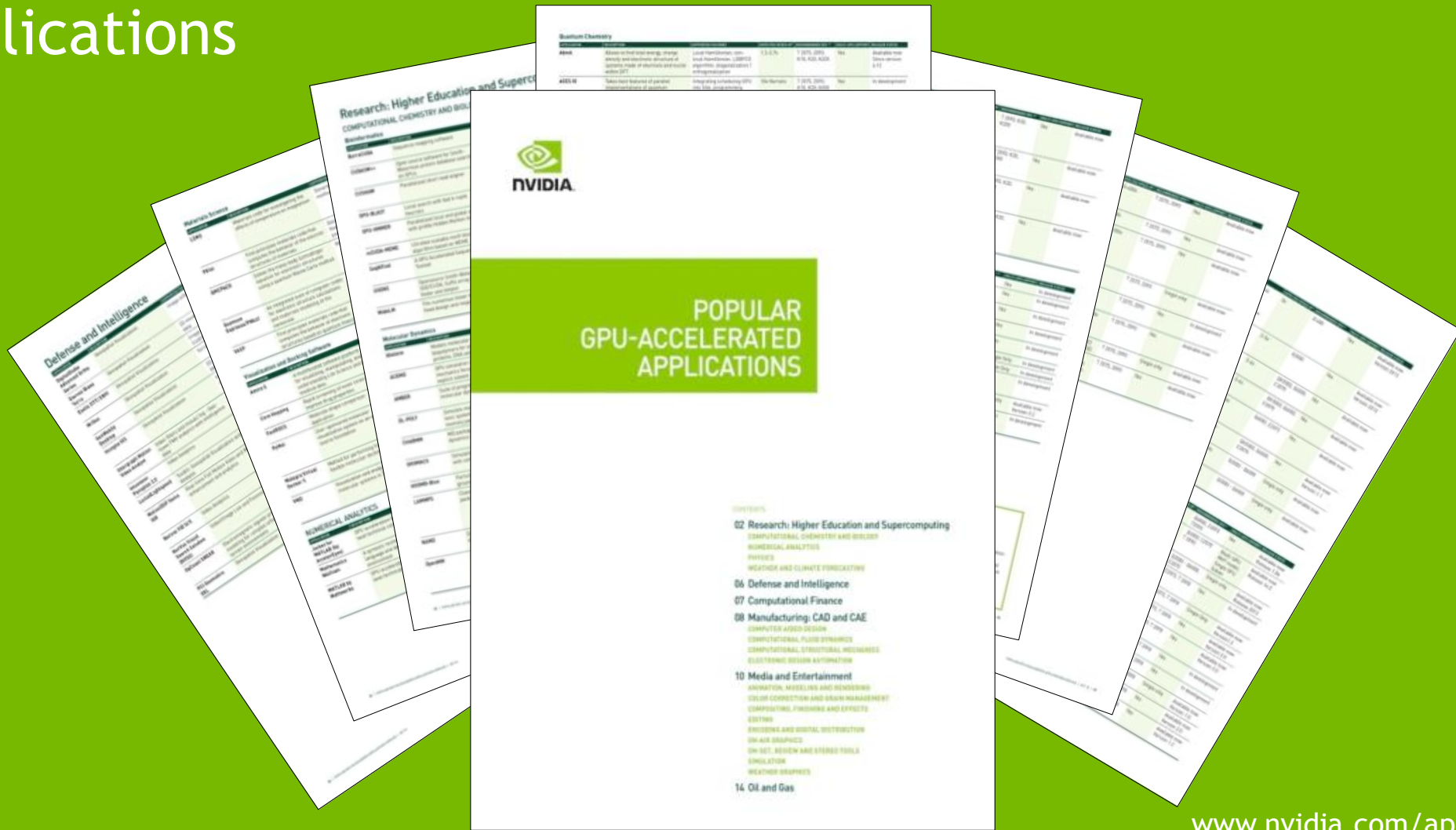
NVIDIA ACCELERATED COMPUTING



# 10X GROWTH IN ACCELERATED COMPUTING



# 500+ GPU-Accelerated Applications





# 70% OF THE WORLD'S SUPERCOMPUTING WORKLOAD ACCELERATED

GROMACS

ANSYS Fluent

Gaussian

VASP

NAMD

Simula Abaqus

WRF

OpenFOAM

ANSYS

LS-DYNA

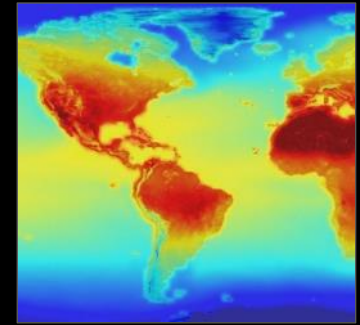
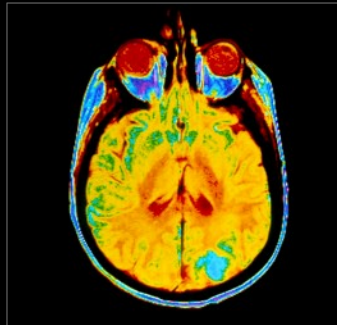
NCBI-BLAST

LAMMPS

AMBER

Quantum Espresso

GAMESS



Top 15 HPC Applications

500+ Accelerated Applications

# THE EXPANDING UNIVERSE OF MODERN AI

**"THE BIG BANG"**  
Big Data  
GPU  
Algorithms

## RESEARCH



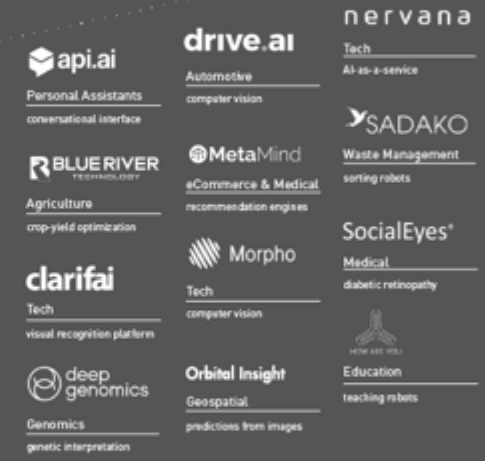
## CORE TECHNOLOGY / FRAMEWORKS



## AI-as-a-PLATFORM



## START-UPS



1,000+ AI START-UPS  
**\$5B IN FUNDING**  
 Source: Venture Scanner

## INDUSTRY LEADERS





# POWERING THE DEEP LEARNING ECOSYSTEM

NVIDIA SDK accelerates every major framework

## COMPUTER VISION

OBJECT DETECTION



IMAGE CLASSIFICATION



## SPEECH & AUDIO

VOICE RECOGNITION



LANGUAGE TRANSLATION



## NATURAL LANGUAGE PROCESSING

RECOMMENDATION ENGINES



SENTIMENT ANALYSIS



## DEEP LEARNING FRAMEWORKS

Caffe



DL4J

DeepLearning4j

Mocha.jl



MINERVA

mxnet



Pylearn2



## NVIDIA DEEP LEARNING SDK

cuDNN



TensorRT



DeepStream SDK



cuBLAS



cuSPARSE



NCCL



# ANNOUNCING NVIDIA GPU CLOUD

## CLOUD CONTAINER REGISTRY

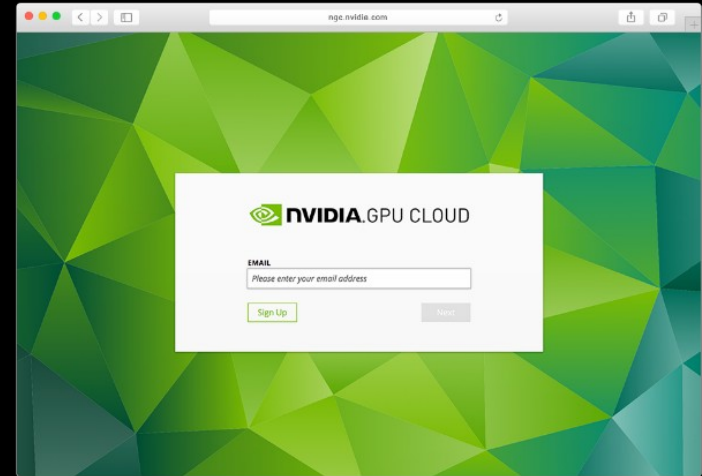
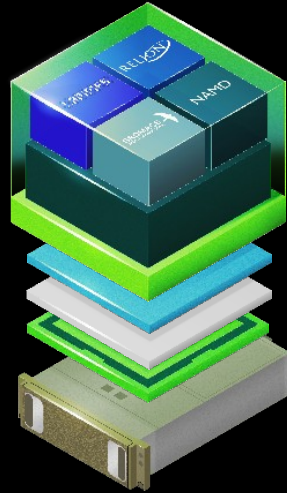
Containerized in NVDocker

Optimized for GPU-accelerated Systems

Up-to-Date Containers

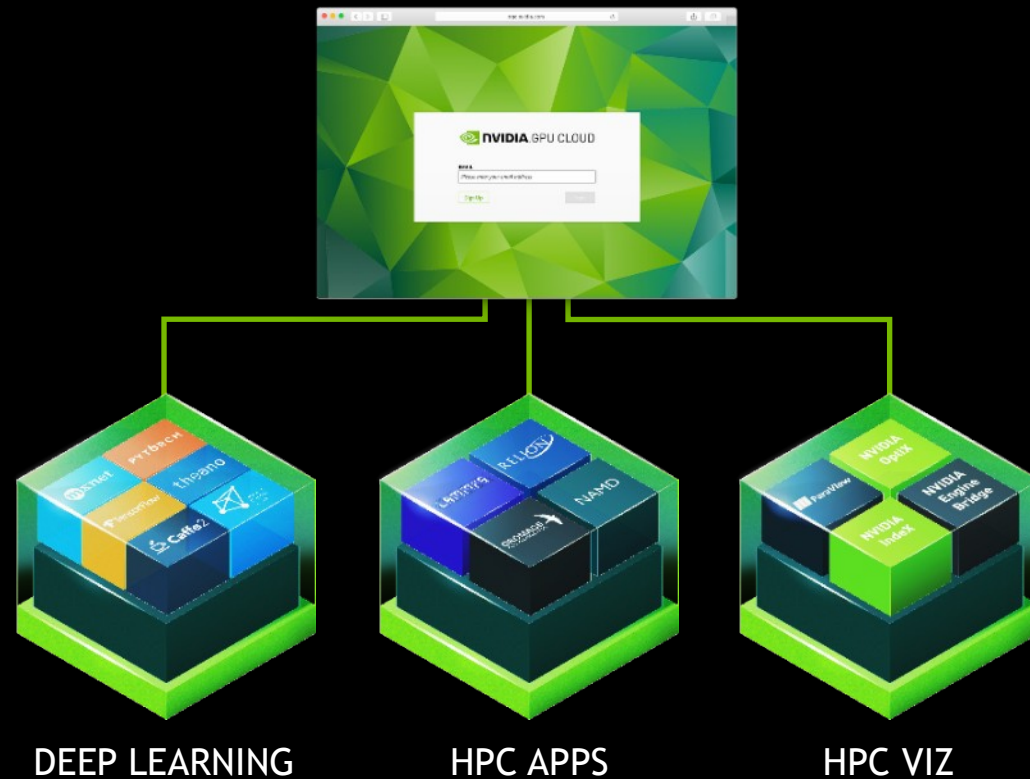
Available NOW

Sign up at [nvidia.com/gpu-cloud](https://nvidia.com/gpu-cloud)



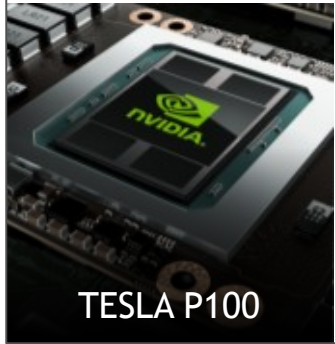


# NVIDIA GPU CLOUD SIMPLIFYING AI & HPC





# NVIDIA END-TO-END DL PLATFORM

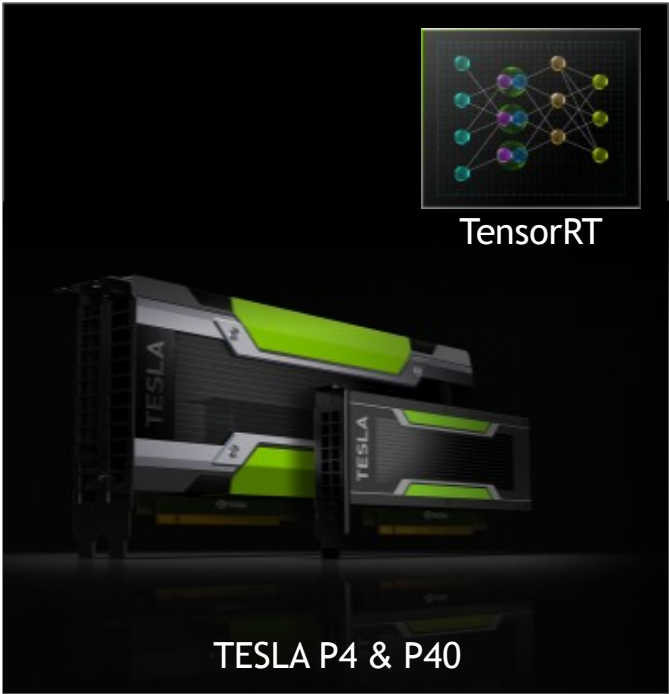


TESLA P100



DGX-1

TRAINING

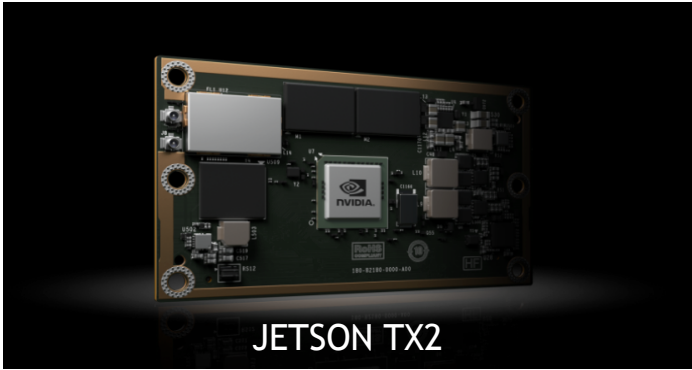


TESLA P4 & P40

DATACENTER INFERENCE



JETPACK



JETSON TX2

INTELLIGENT NVR & CAMERA



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# AI IS REVOLUTIONIZING EVERY INDUSTRY

In addition to our AI technologies, we advance fundamental research, foster universities and startups, and bring our full capabilities to industries where we can have the greatest impact.

# GETTING STARTED WITH DEEP LEARNING

[developer.nvidia.com/deep-learning](https://developer.nvidia.com/deep-learning)

**NVIDIA ACCELERATED COMPUTING** Downloads Training Ecosystem Forums  [Register Now](#) [Log in](#)

## DEEP LEARNING

Deep learning is the fastest-growing field in machine learning. It uses many-layered Deep Neural Networks (DNNs) to learn levels of representation and abstraction that make sense of data such as images, sound, and text.



[Home](#) > [ComputeWorks](#) > [Deep Learning](#)



Get Started With  
Deep Learning



Download Deep  
Learning Software

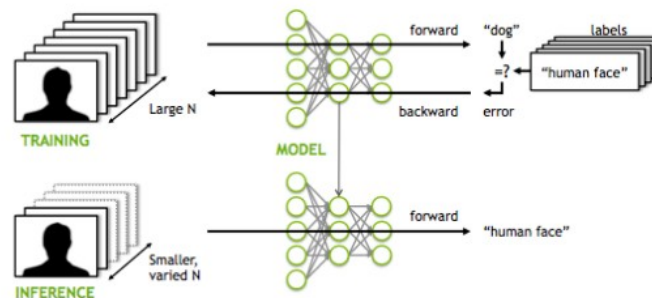


Deep Learning  
Institute

## NVIDIA GPUs - The Engine of Deep Learning

Traditional machine learning uses handwritten feature extraction and modality-specific machine learning algorithms to label images or recognize voices. However, this method has several drawbacks in both time-to-solution and accuracy.

Today's advanced deep neural networks use algorithms, big data, and the computational power of the GPU to change this dynamic. Machines are now able to learn at a speed, accuracy, and scale that are driving true **artificial intelligence**.



# DLI - DEEP LEARNING INSTITUTE



TEACHING THE WORLD  
TO SOLVE PROBLEMS  
WITH DEEP LEARNING



DEEP  
LEARNING  
INSTITUTE

<http://www.nvidia.com/object/deep-learning-institute.html>





## ONLINE LABS

The DLI offers self-paced, online labs that are available worldwide.

### Applications of Deep Learning with Caffe, Theano, and Torch

Gain an understanding of GPU-accelerated deep learning and learn which deep learning software frameworks are right for you.

[Take The Lab >](#)

### Image Classification with NVIDIA DIGITS

Learn how to leverage deep neural networks (DNN) within the deep learning workflow to solve a real-world image classification problem using NVIDIA DIGITS™.

[Take The Lab >](#)

### Object Detection with NVIDIA DIGITS

Explore three approaches to identifying a specific feature within an image using neural networks trained on NVIDIA DIGITS.

[Take The Lab >](#)

### Image Segmentation with TensorFlow

Explore how to train and evaluate an image segmentation network with TensorFlow, using the Sunnybrook cardiac MRI dataset to identify the left ventricle of a human heart.

[Take The Lab >](#)

<https://www.nvidia.com/en-us/deep-learning-ai/education/>

# NVIDIA HW GRANT PROGRAM

Titan X Pascal



- Scientific Computing
- HPC
- Deep Learning

Quadro P5000



- Scientific Visualization
- Virtual Reality

Jetson TX1  
(Dev Kit)



- Robotics
- Autonomous Machines

# NVIDIA INCEPTION PROGRAM

Accelerating AI startups with powerful GPU tools, tech, and deep learning expertise.

**APPLY NOW**





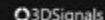















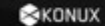














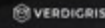












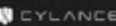







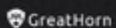








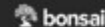















<http://www.nvidia.com/object/inception-program.html>





## NVIDIA INCEPTION — 2.300 DEEP LEARNING STARTUPS

The NVIDIA Inception program nurtures more than 1,300 startups that are revolutionizing industries with advances in AI and data science. The program helps startups during critical stages of product development, prototyping, and deployment. At GTC, our annual developer conference, we awarded six AI startups with a total of \$1.5 million to accelerate their work.

HEALTHCARE	RETAIL, ETAIL	IOT AND MANUFACTURING	AUTONOMOUS MACHINES
 	 	 	 
 	 	 	 
 	 	 	 
 	 	 	 
 		 	 
 			 
FINANCIAL	SECURITY, IVA	CYBER	AEC
 	 	 	 
 	 	 	 
			
PLATFORMS AND APIS	DATA MANAGEMENT	DEVELOPMENT PLATFORMS	BUSINESS INTELLIGENCE AND VISUALIZATION
 		 	 
 		 	 
 			

**GPU** TECHNOLOGY  
CONFERENCE

## THE EPICENTER OF GPU COMPUTING

GTC was started in 2009 to foster a new approach to high performance computing. Today, it's one of the most important AI events of the year. GTC 2017 hosted more than 7,000 attendees, 260 press and analysts, and 570 technical sessions. The world's top 15 tech companies and top 10 automakers were in attendance, along with more than 100 startups focused on AI and VR.



## FOUR THINGS TO REMEMBER

Time for Accelerated Computing has come

Volta has taken off - available in every cloud, every OEM, every datacenter

Deep Learning is the transformative new tool for science

Tesla platform now accelerates over 70% of SC workloads including over 500 apps and all DL Frameworks



Marcio Aguiar

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**NVIDIA.**