

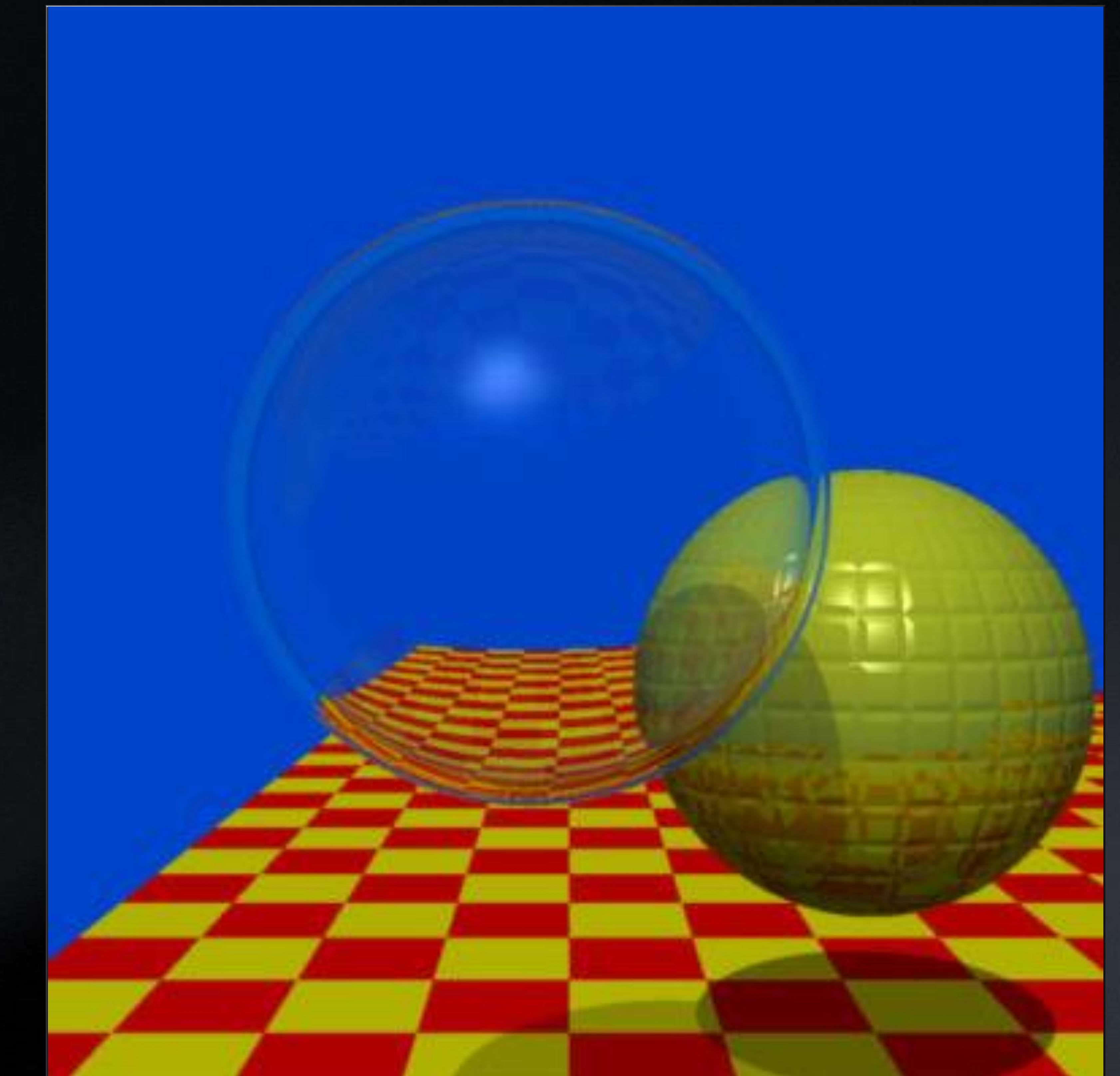


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“THE HOLY GRAIL” OF GRAPHICS

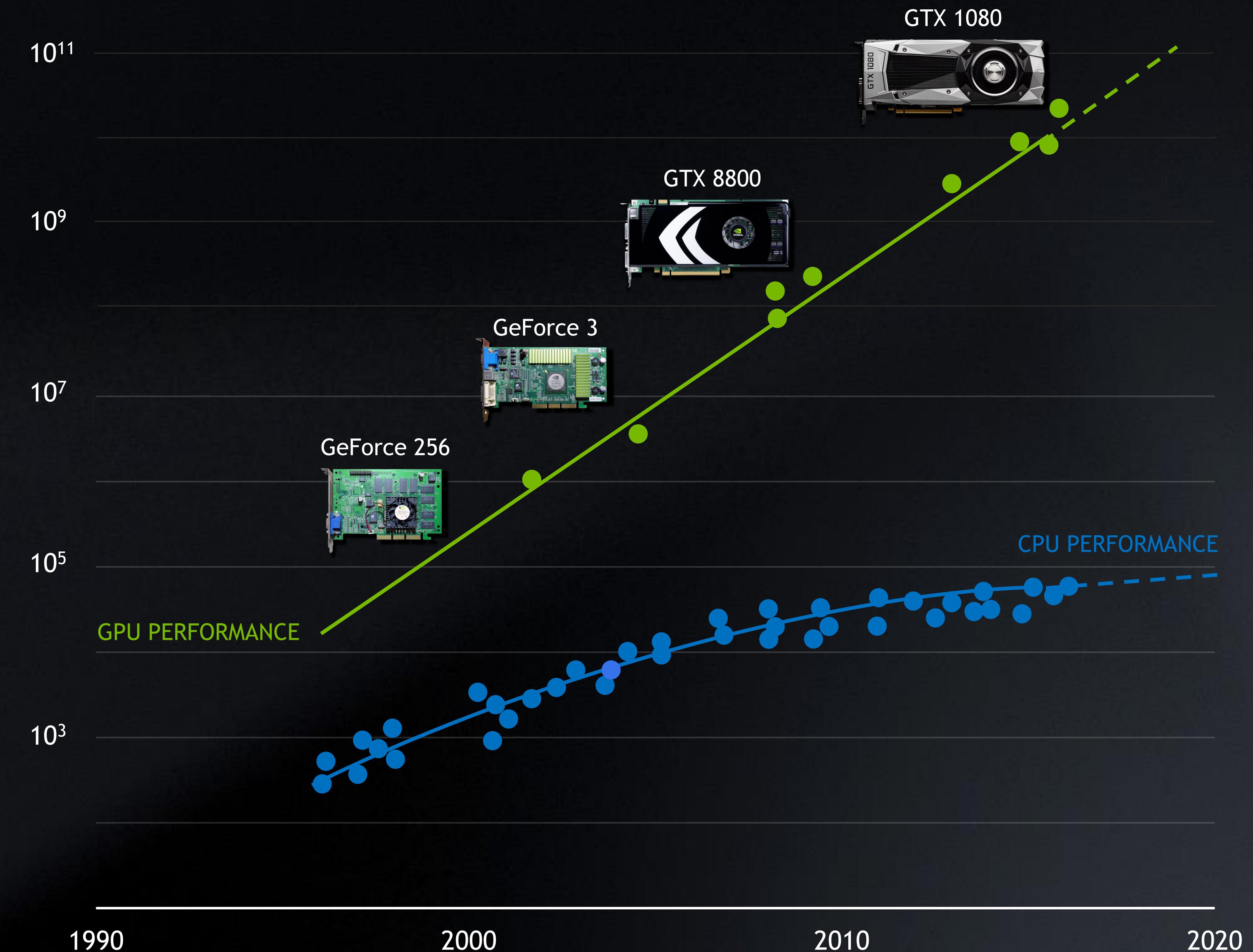


SIMULATING LIGHT RAYS



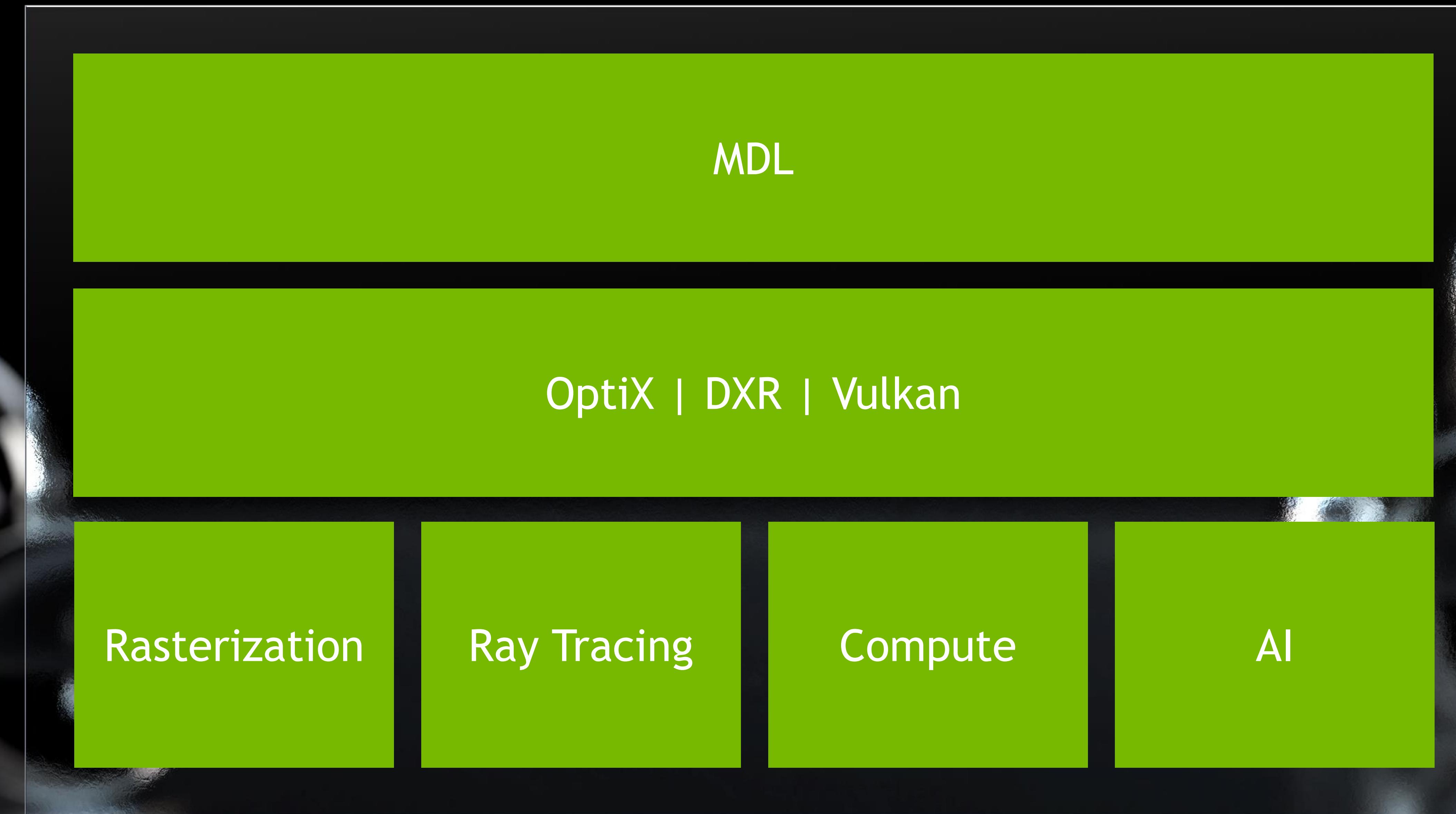
Turner Whitted | 1979
“Multi-bounce Recursive Ray Tracing”
1.2 Hours for 512x512 on VAX 11/780

THE GPU REVOLUTION

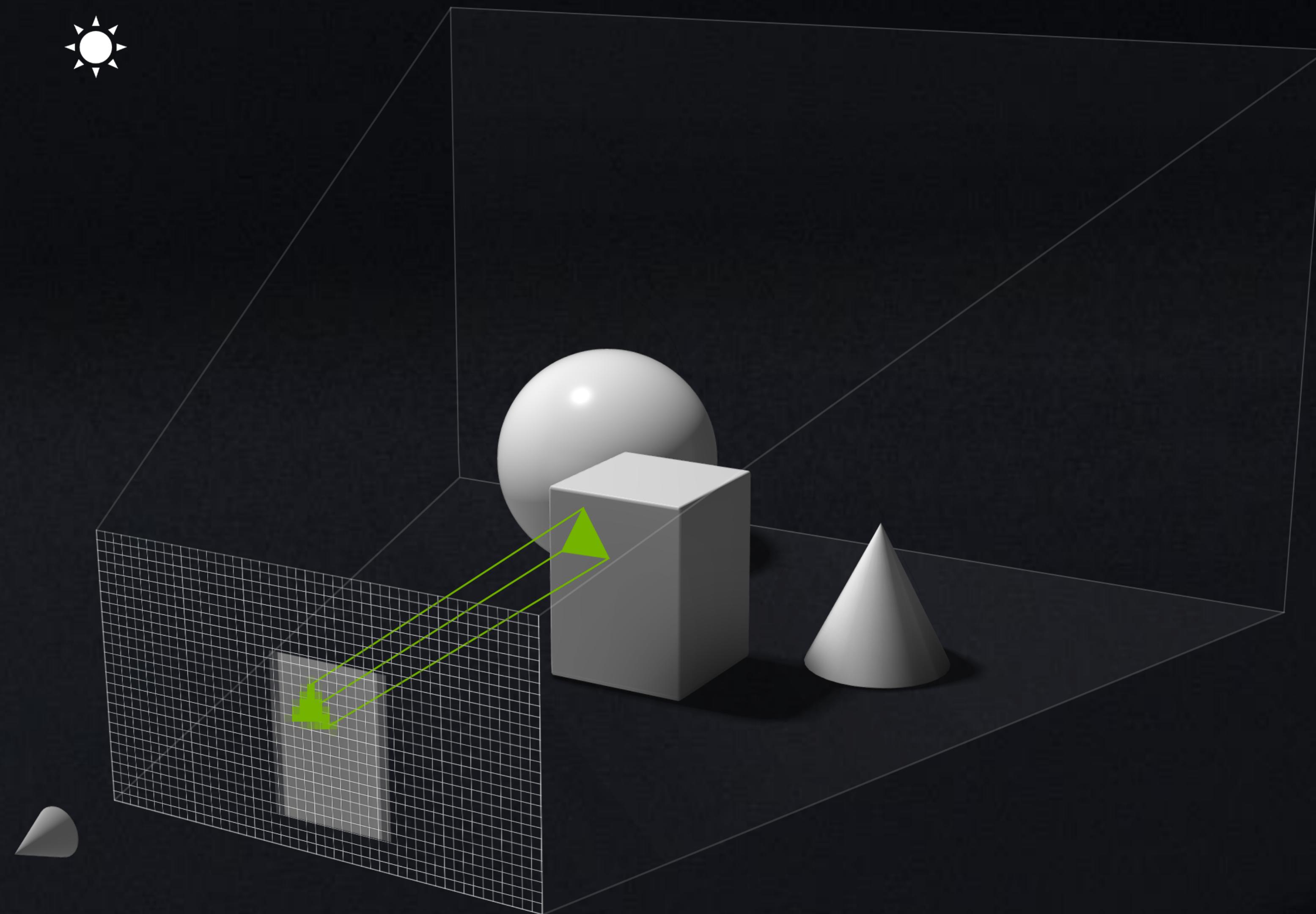


NVIDIA RTX

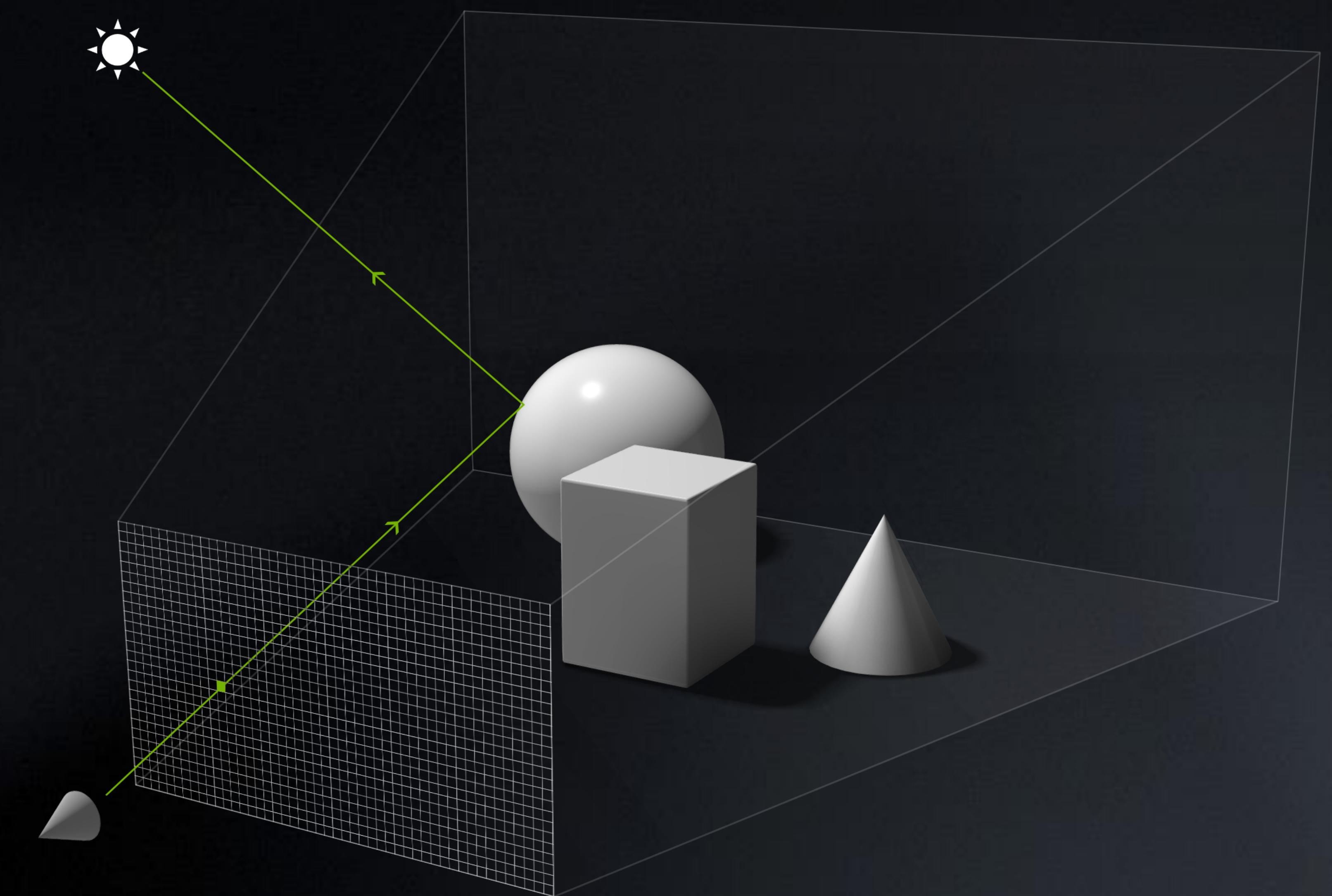
GRAPHICS REINVENTED



RTX HYBRID RENDERING



RASTERIZATION



RAY TRACING

NVIDIA RTX TECHNOLOGY

ANNOUNCED AT GDC, MARCH 2018





NVIDIA RTX TECHNOLOGY

ANNOUNCED AT GDC, MARCH 2018



REVOLUTIONARY NEW GAME MACHINE



3,000 Easy Payments of

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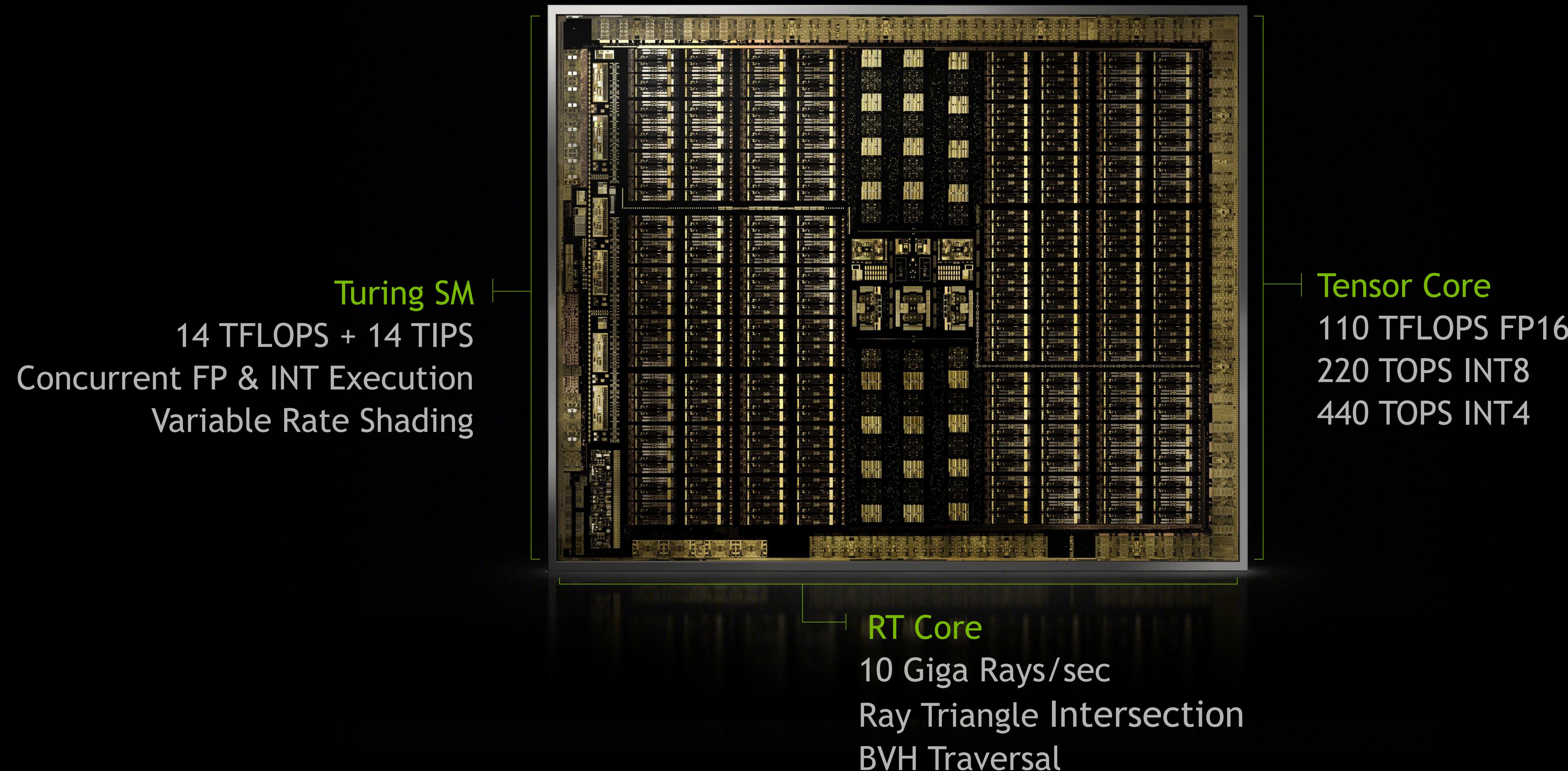
*\$ 60,000



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TURING BUILT FOR RTX

GREATEST LEAP SINCE 2006 CUDA GPU



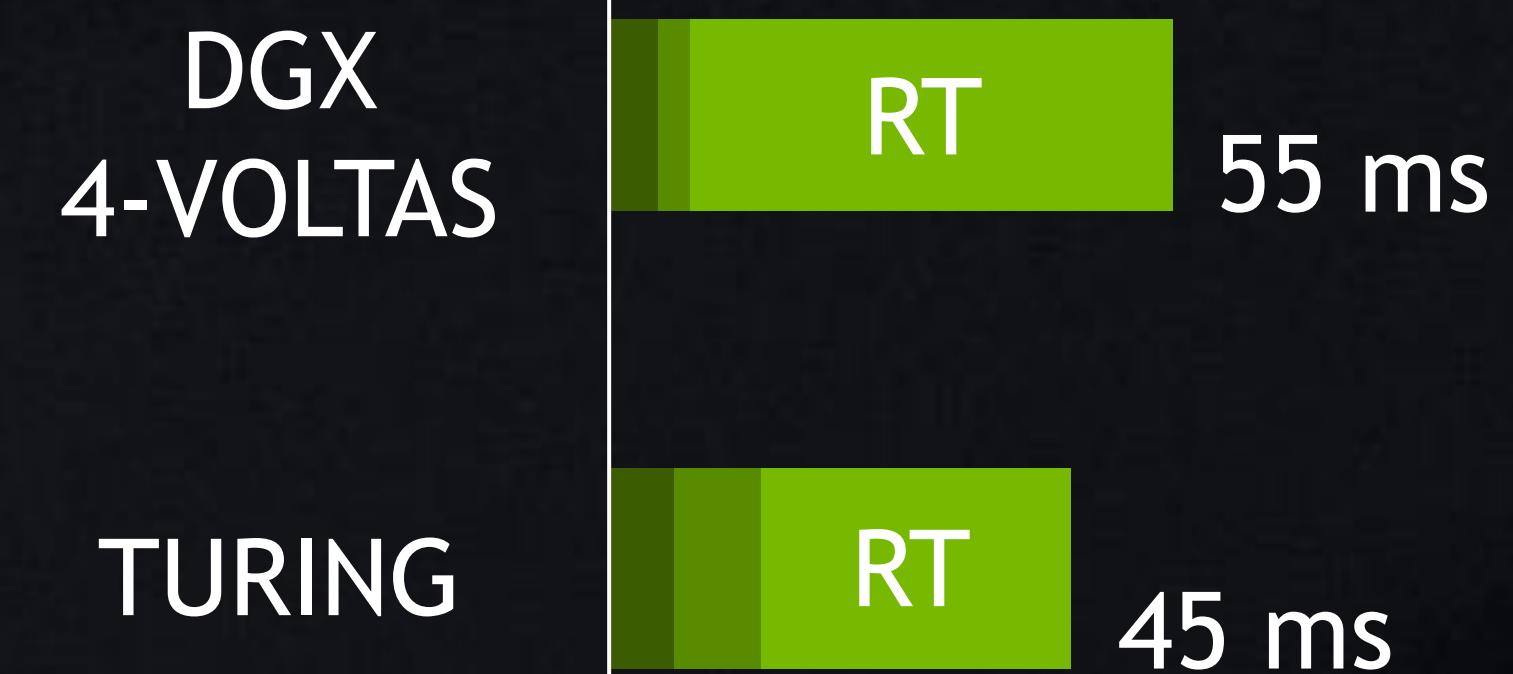
TURING BUILT FOR RTX



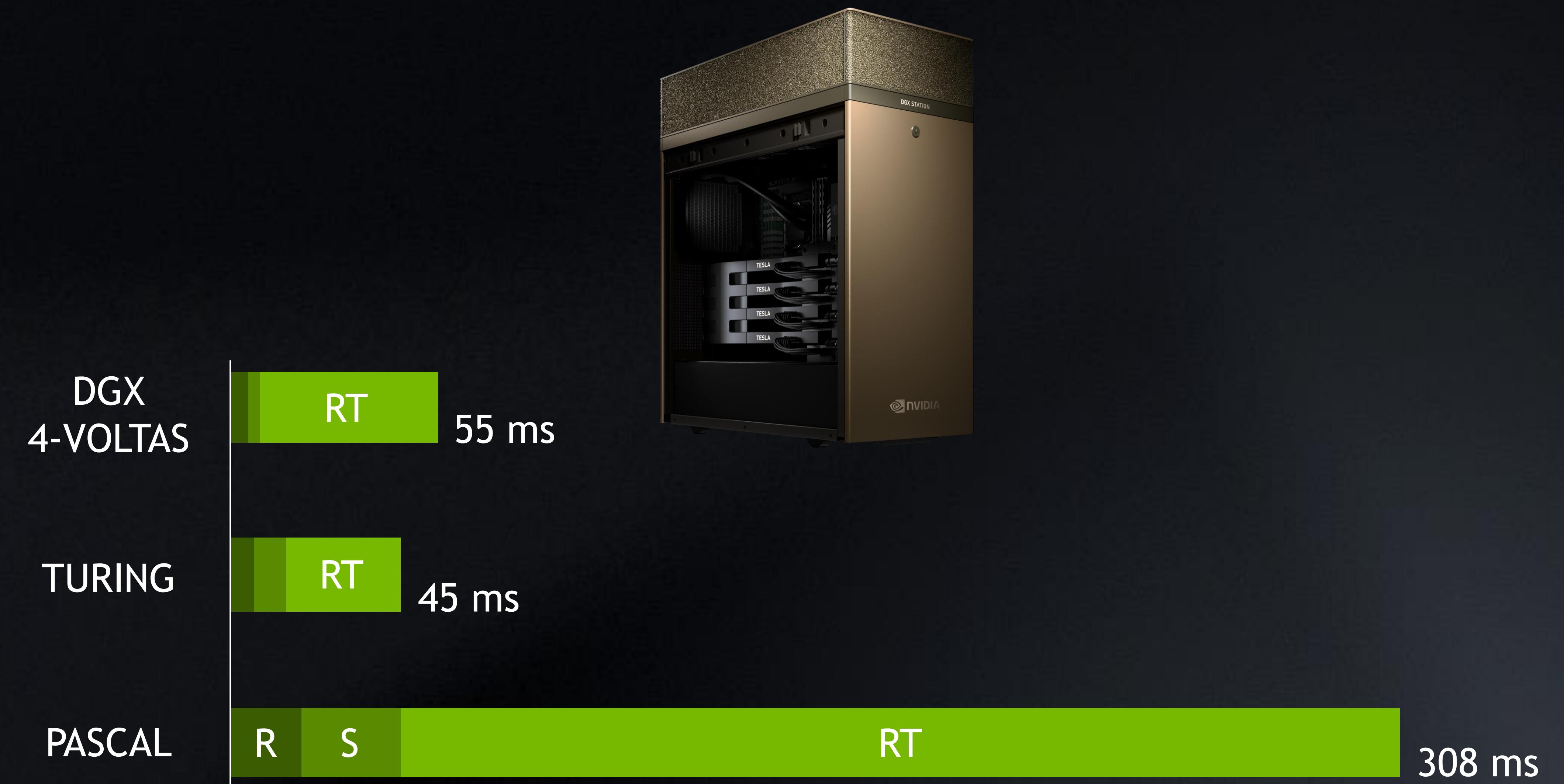
DGX
4-VOLTAS | RT 55 ms



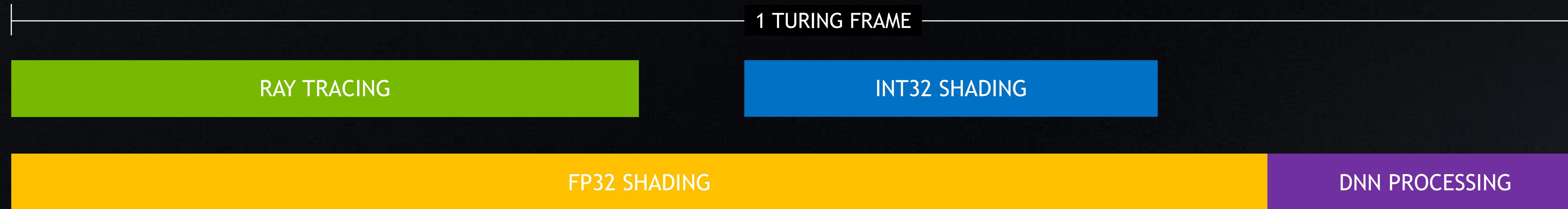
TURING BUILT FOR RTX



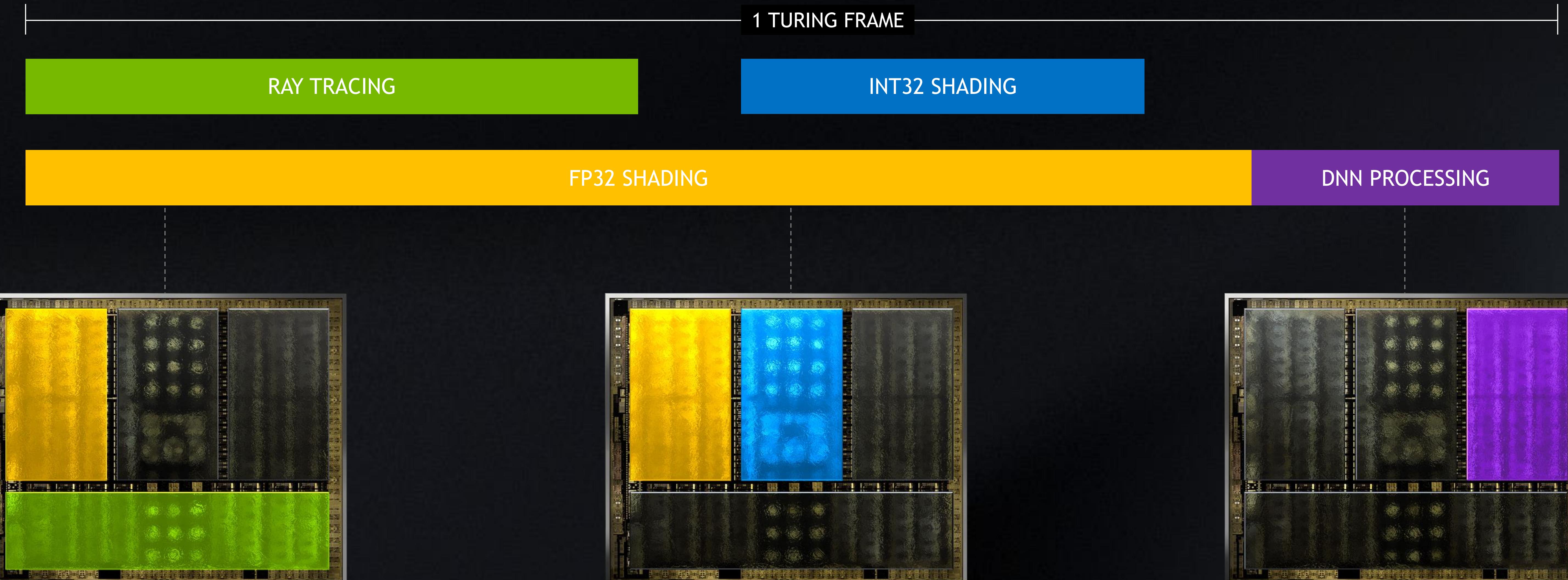
TURING BUILT FOR RTX



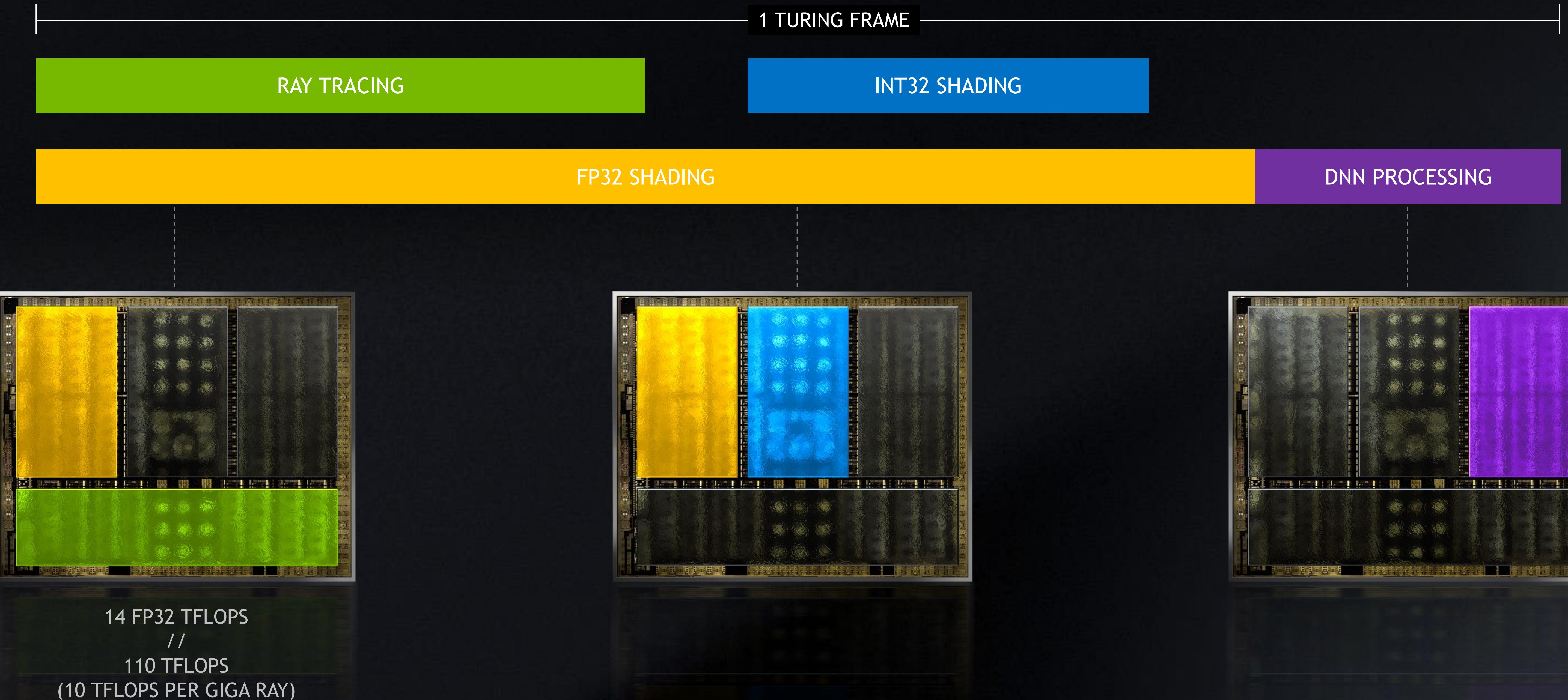
A NEW STANDARD OF PERFORMANCE



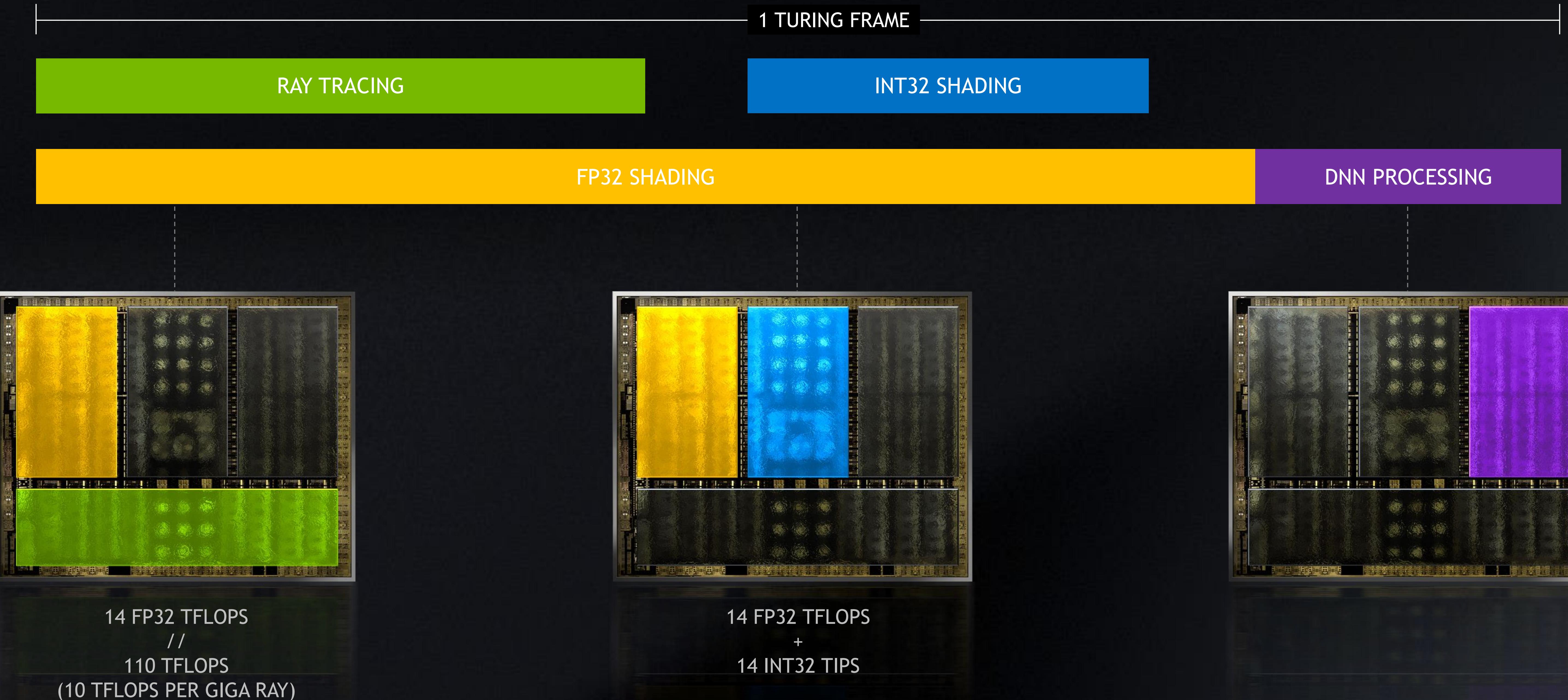
A NEW STANDARD OF PERFORMANCE



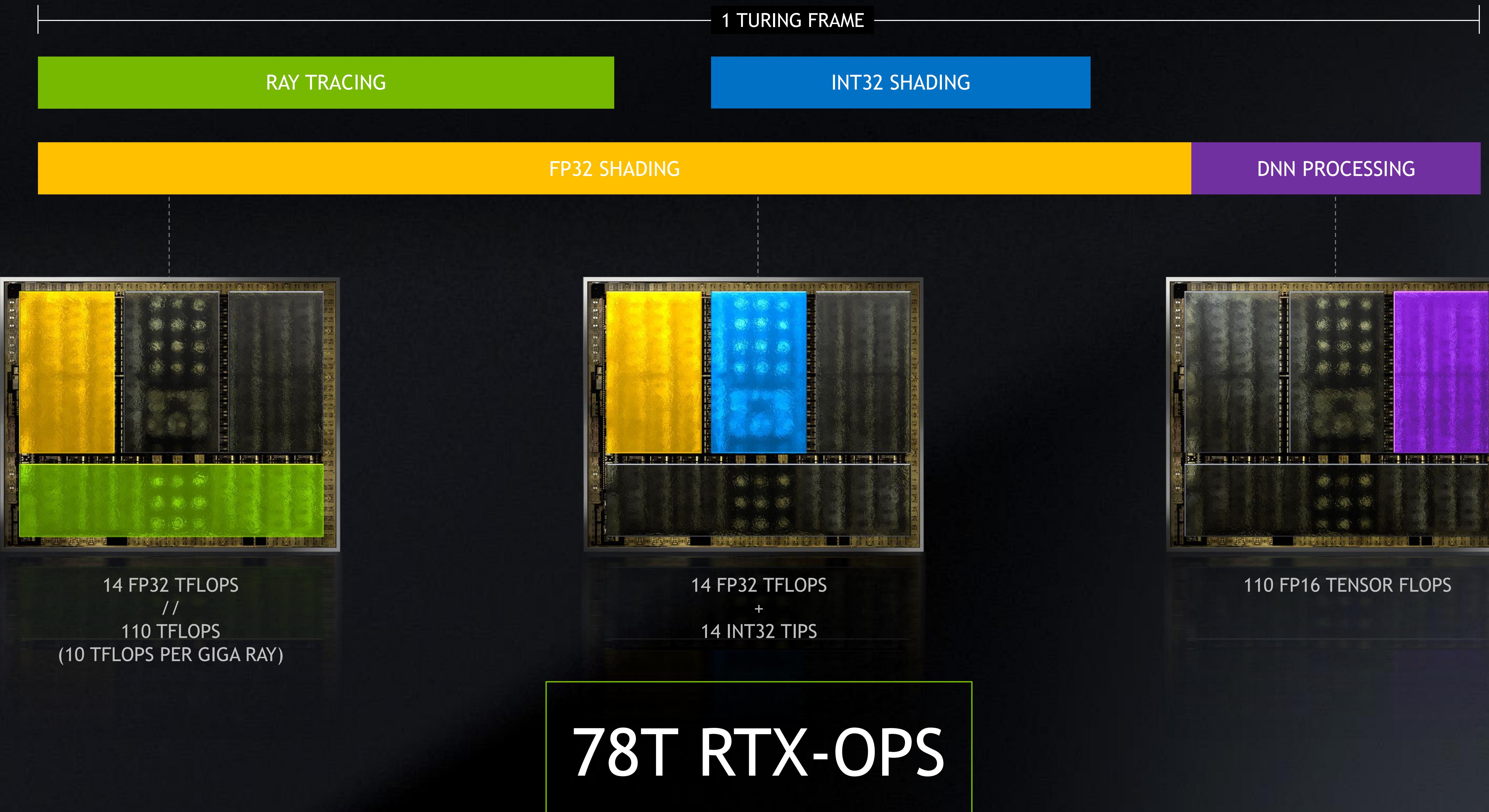
A NEW STANDARD OF PERFORMANCE



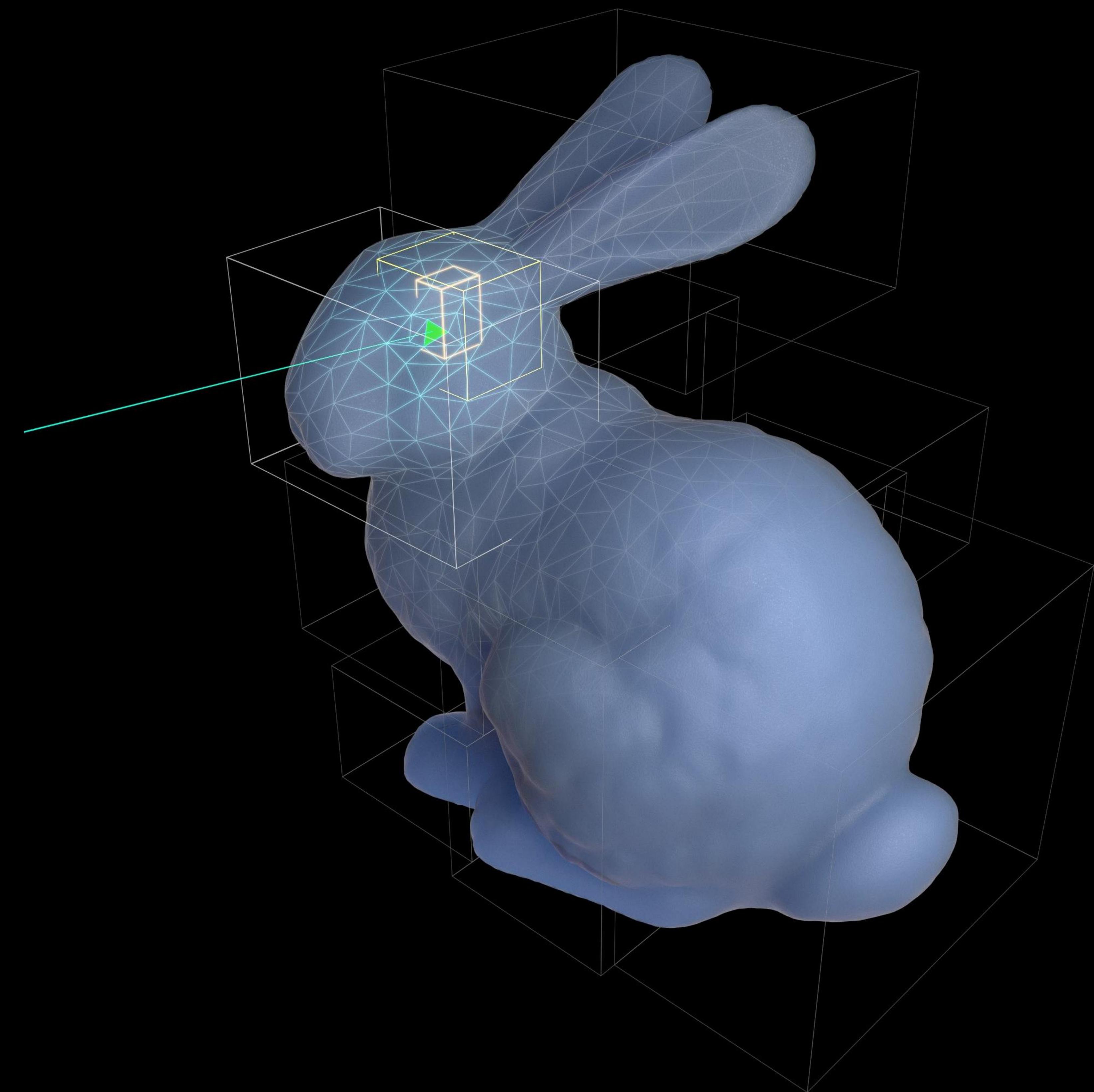
A NEW STANDARD OF PERFORMANCE



A NEW STANDARD OF PERFORMANCE

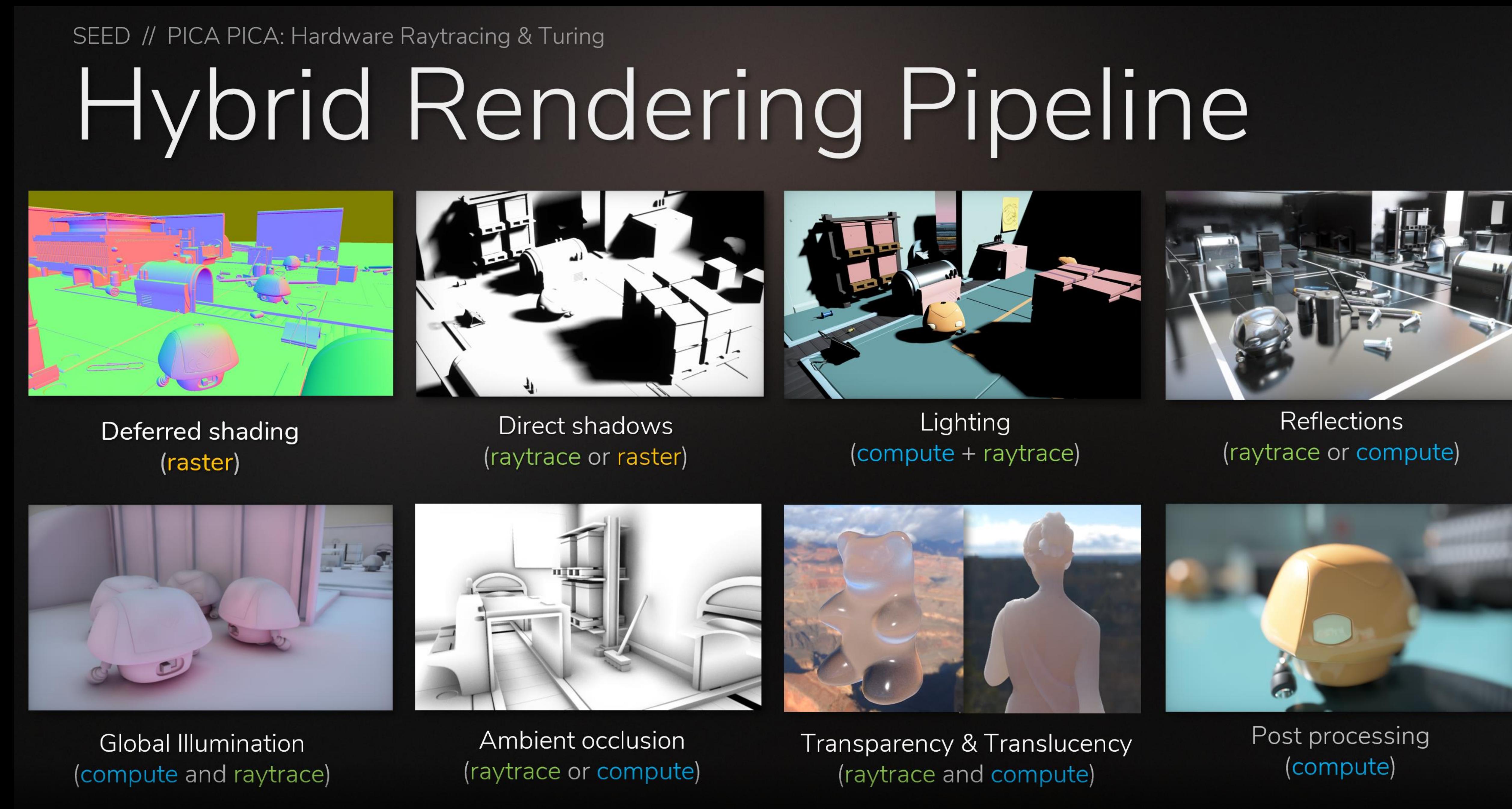


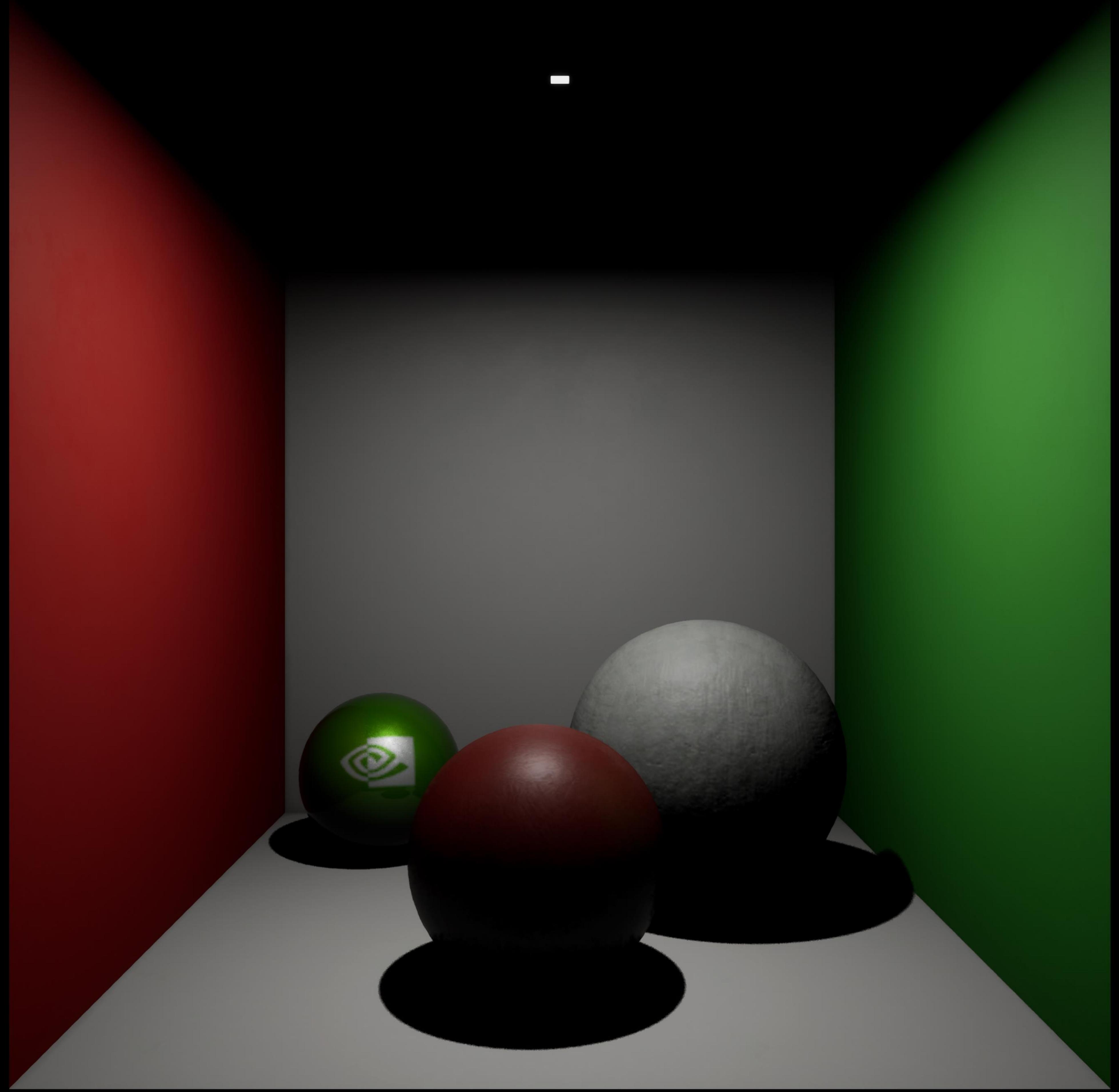
RT CORE RAY TRACING ACCELERATOR



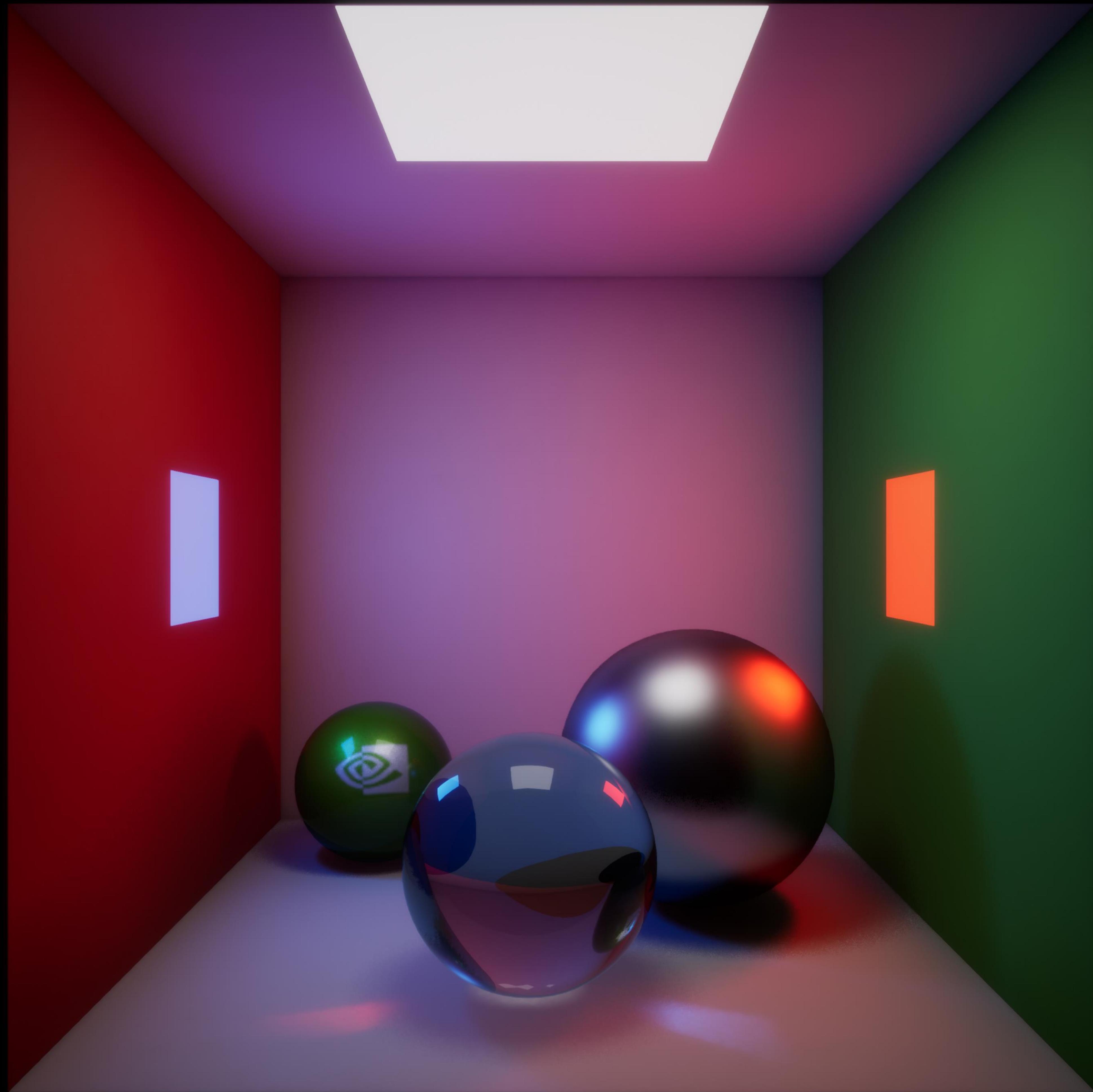
*“Turing improves raytracing up to 6X compared to Volta...
Insane workloads still manageable.”*

- Colin Barré-Brisebois and Henrik Halén – SIGGRAPH 2018

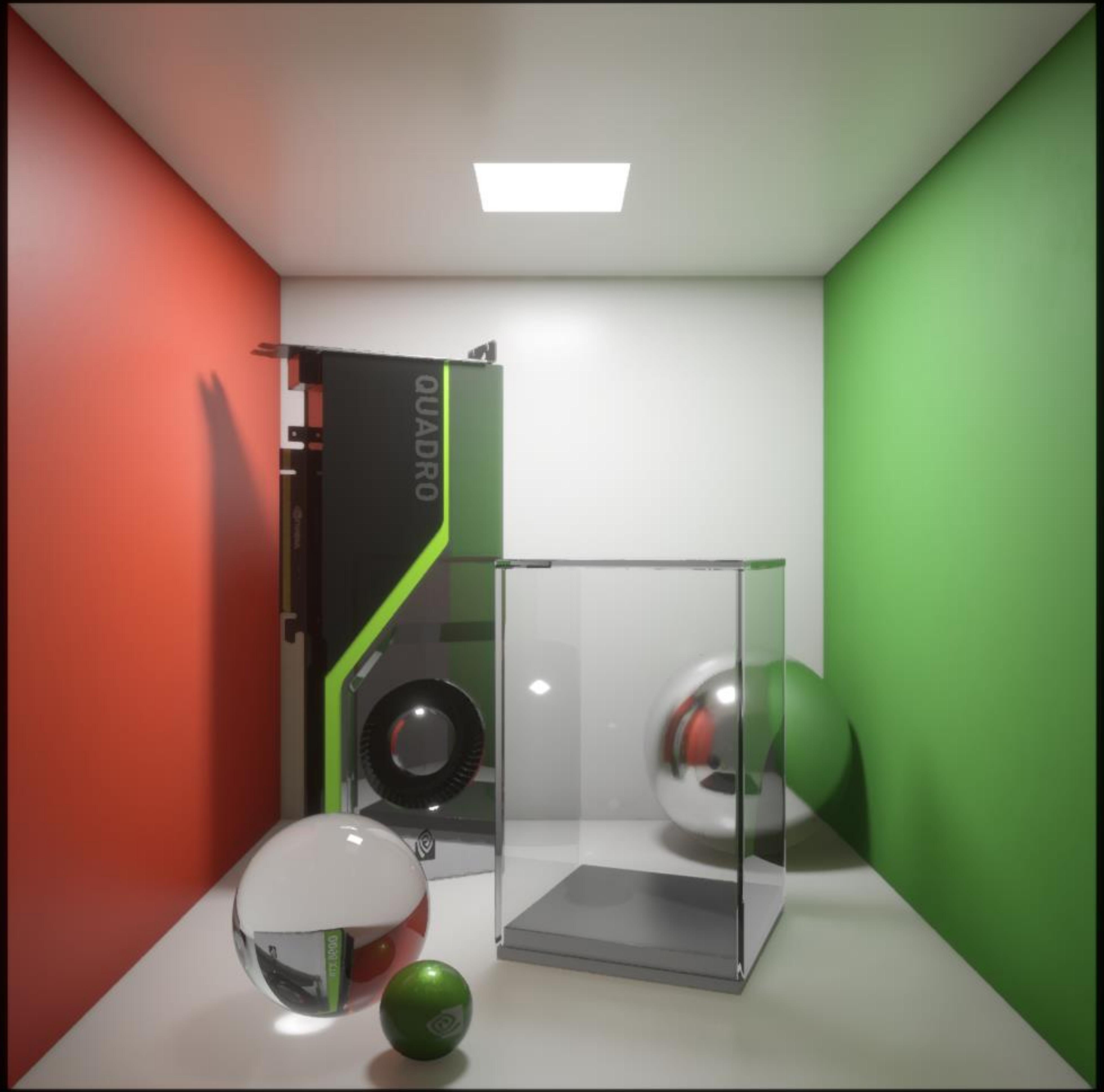




RTX
OFF



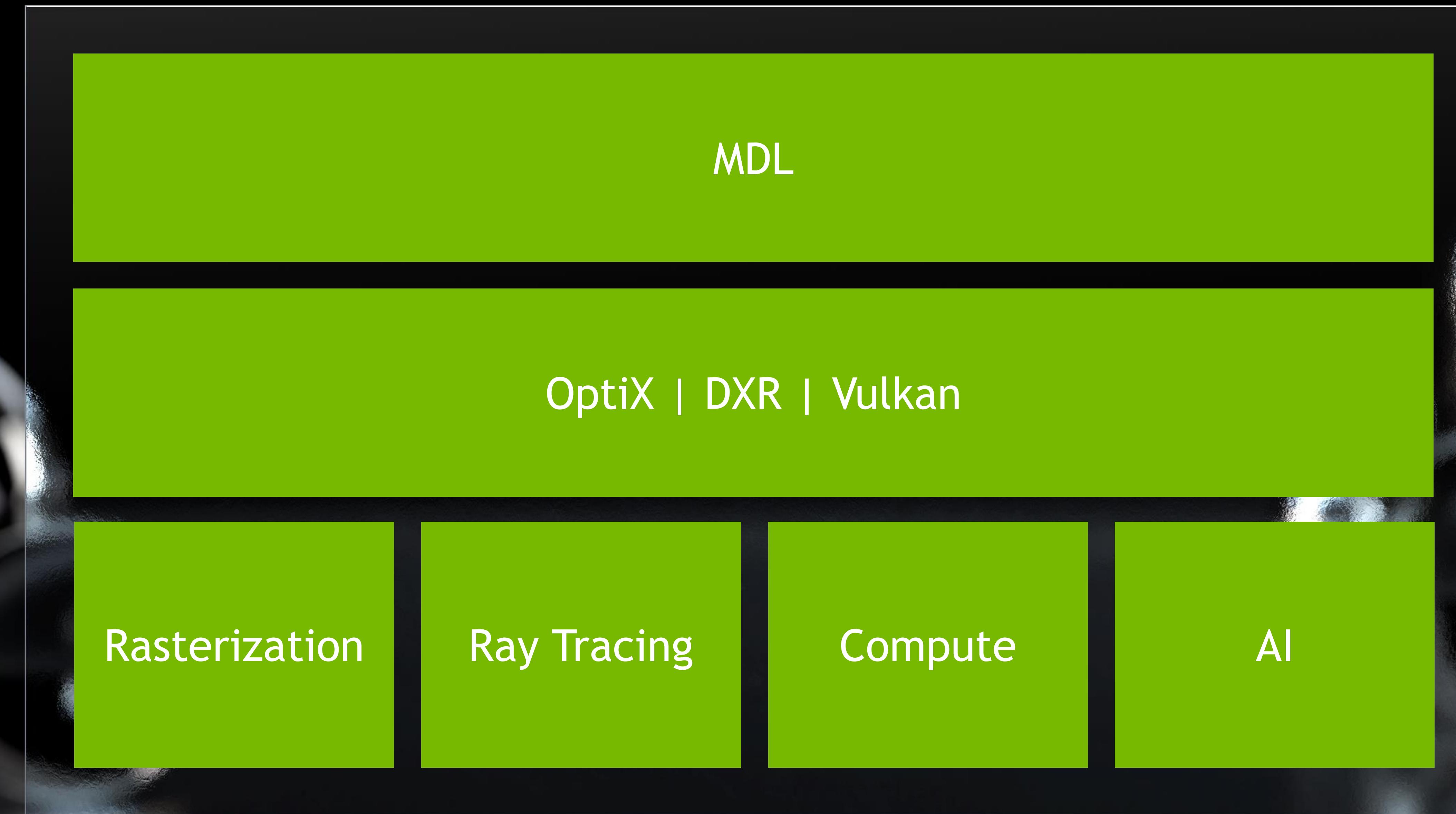
RTX
ON

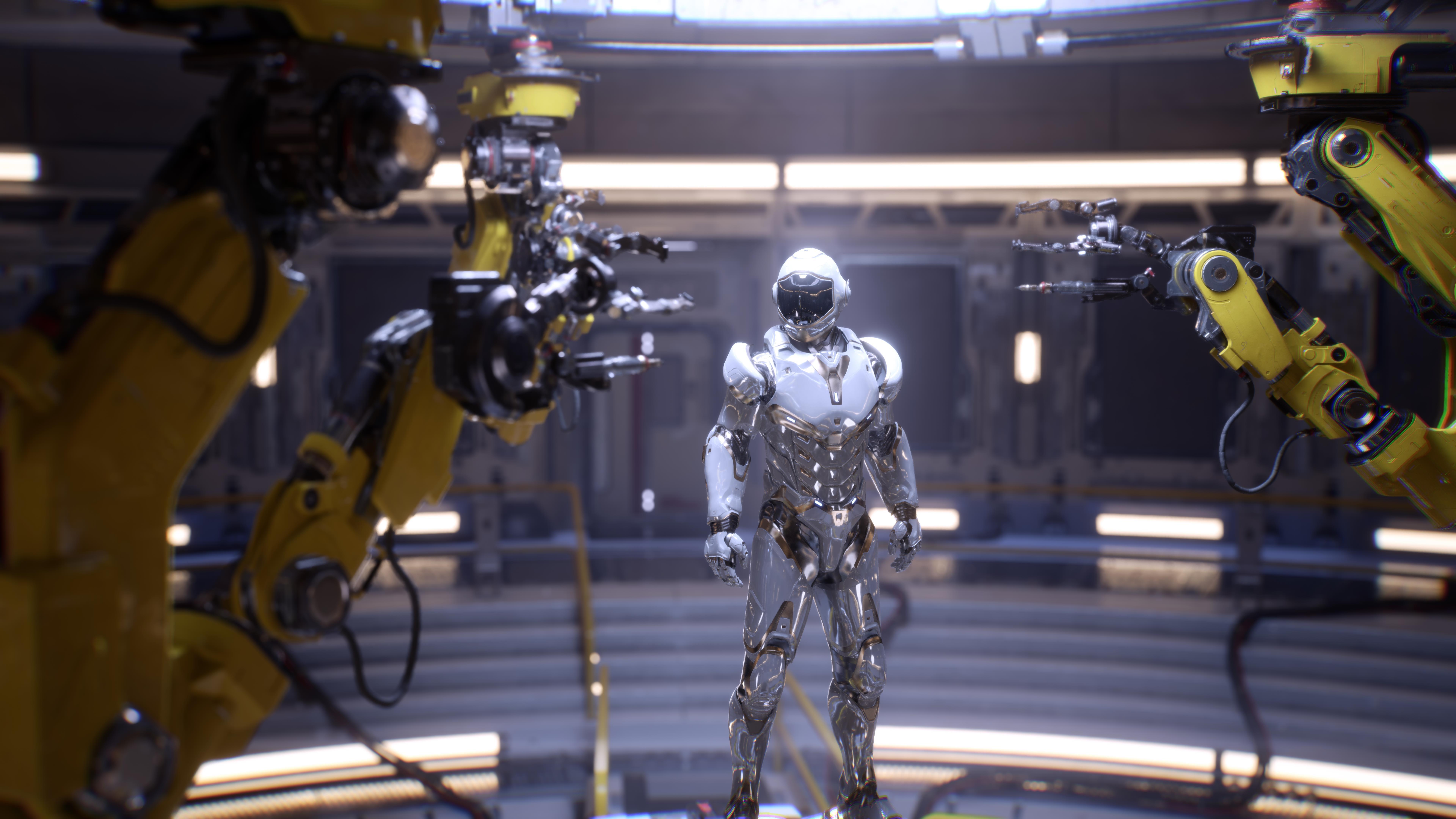


RTX
ON

NVIDIA RTX

GRAPHICS REINVENTED





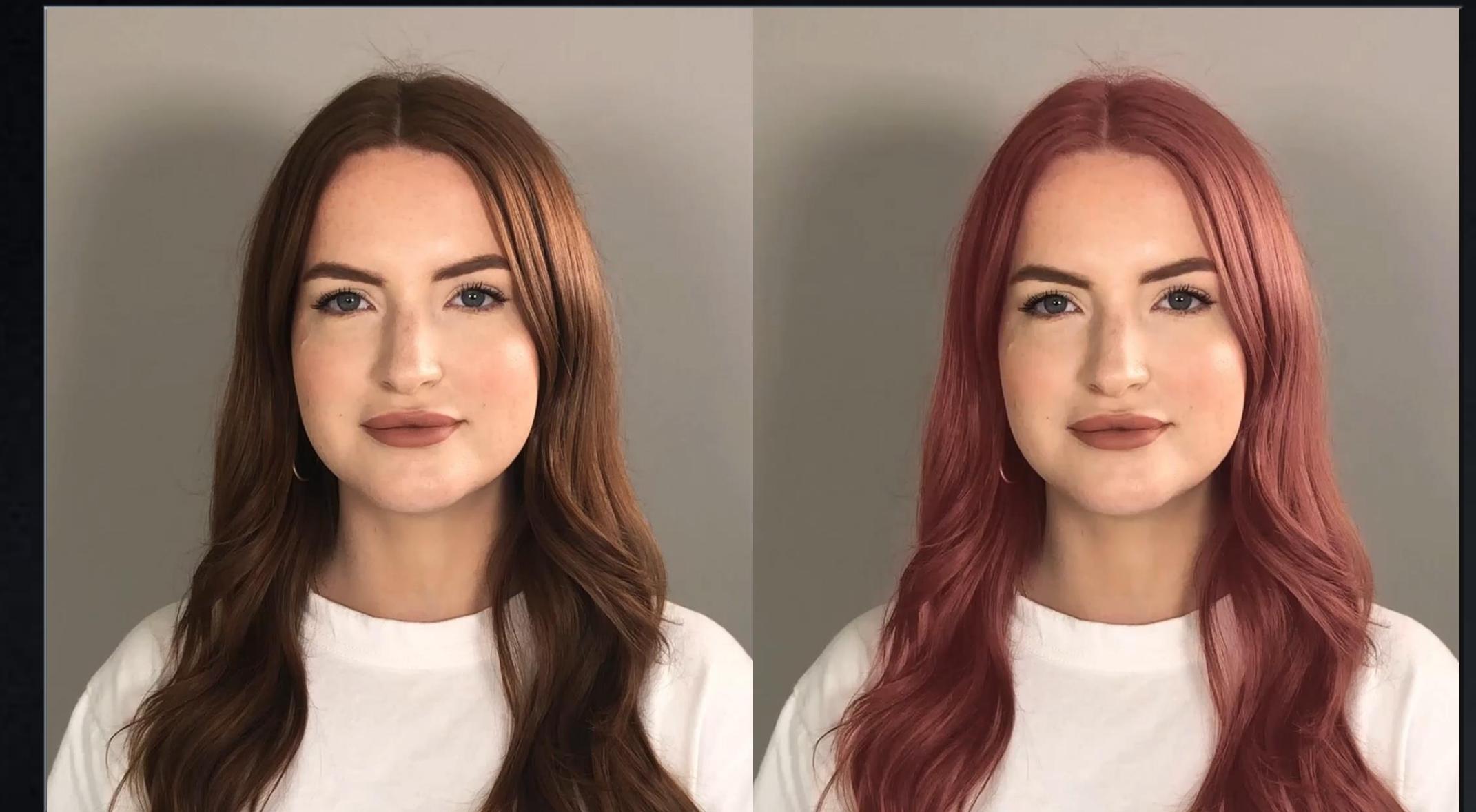
MAGIC OF DEEP LEARNING



COLORIZE IMAGES
UC Berkeley



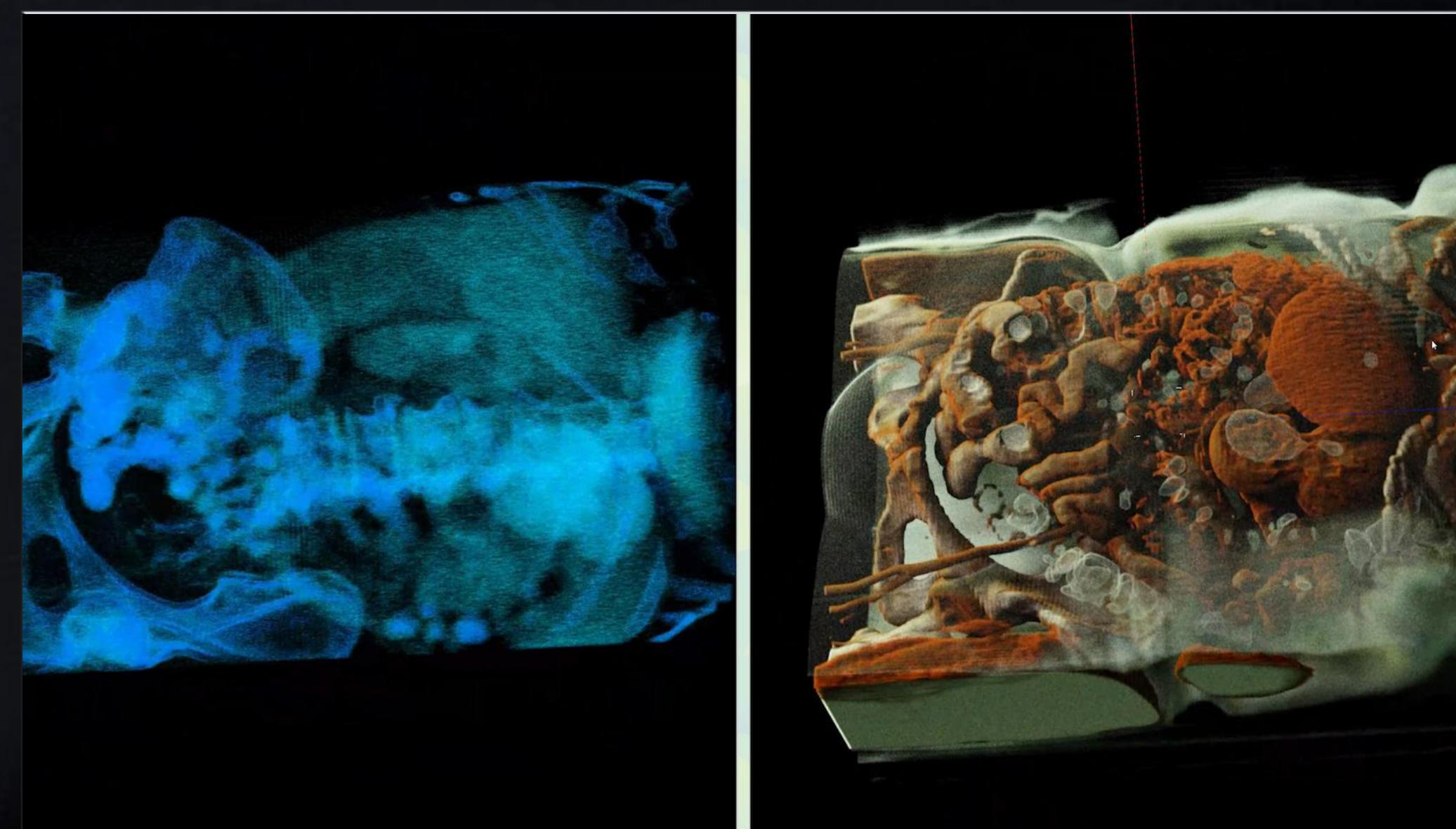
SEGMENTATION
NVIDIA



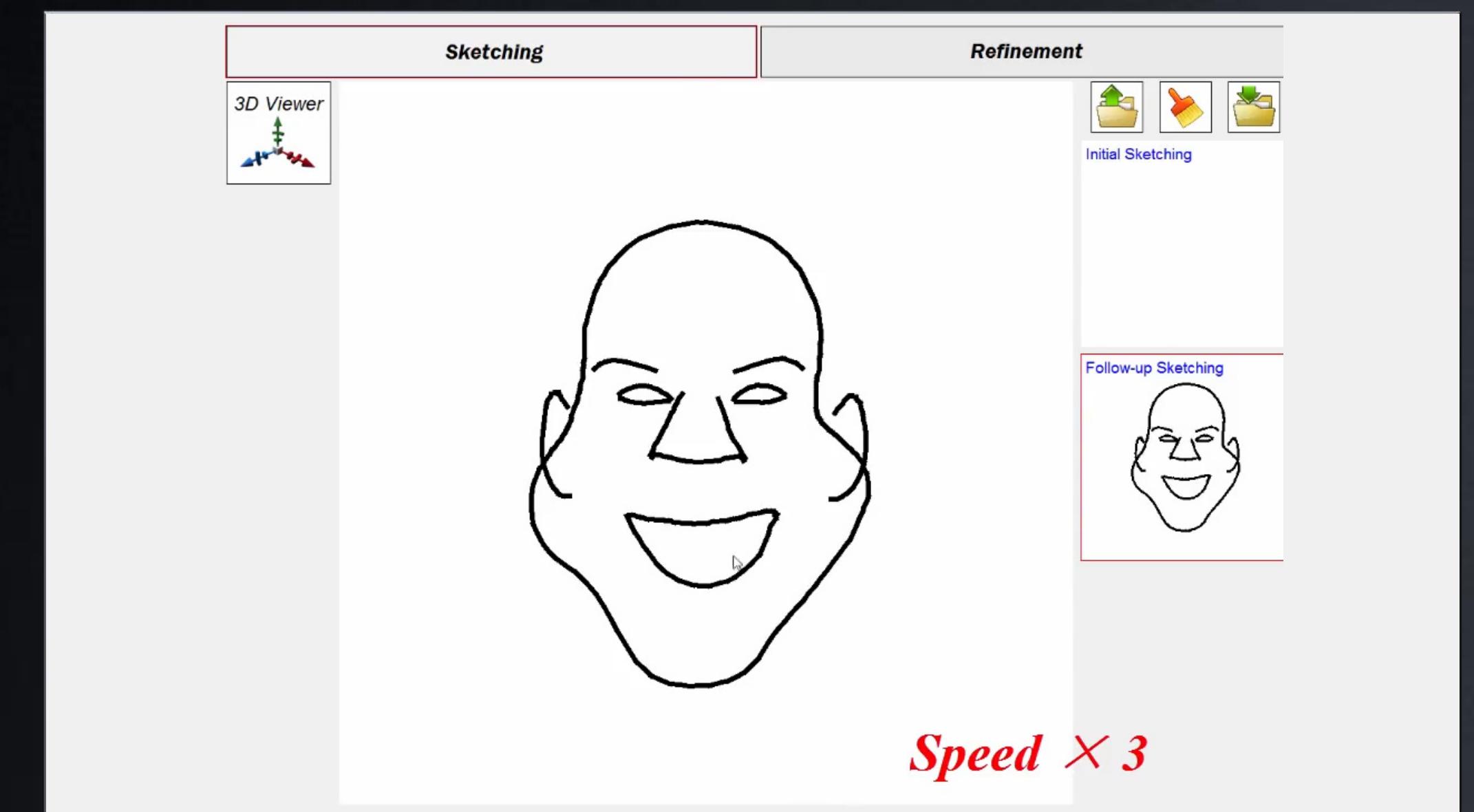
COLORIZING HAIR
L'Oréal



SUPER RESOLUTION
NVIDIA



CLARA MEDICAL IMAGING
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SKETCH 2 FACE
NVIDIA

MAGIC OF DEEP LEARNING



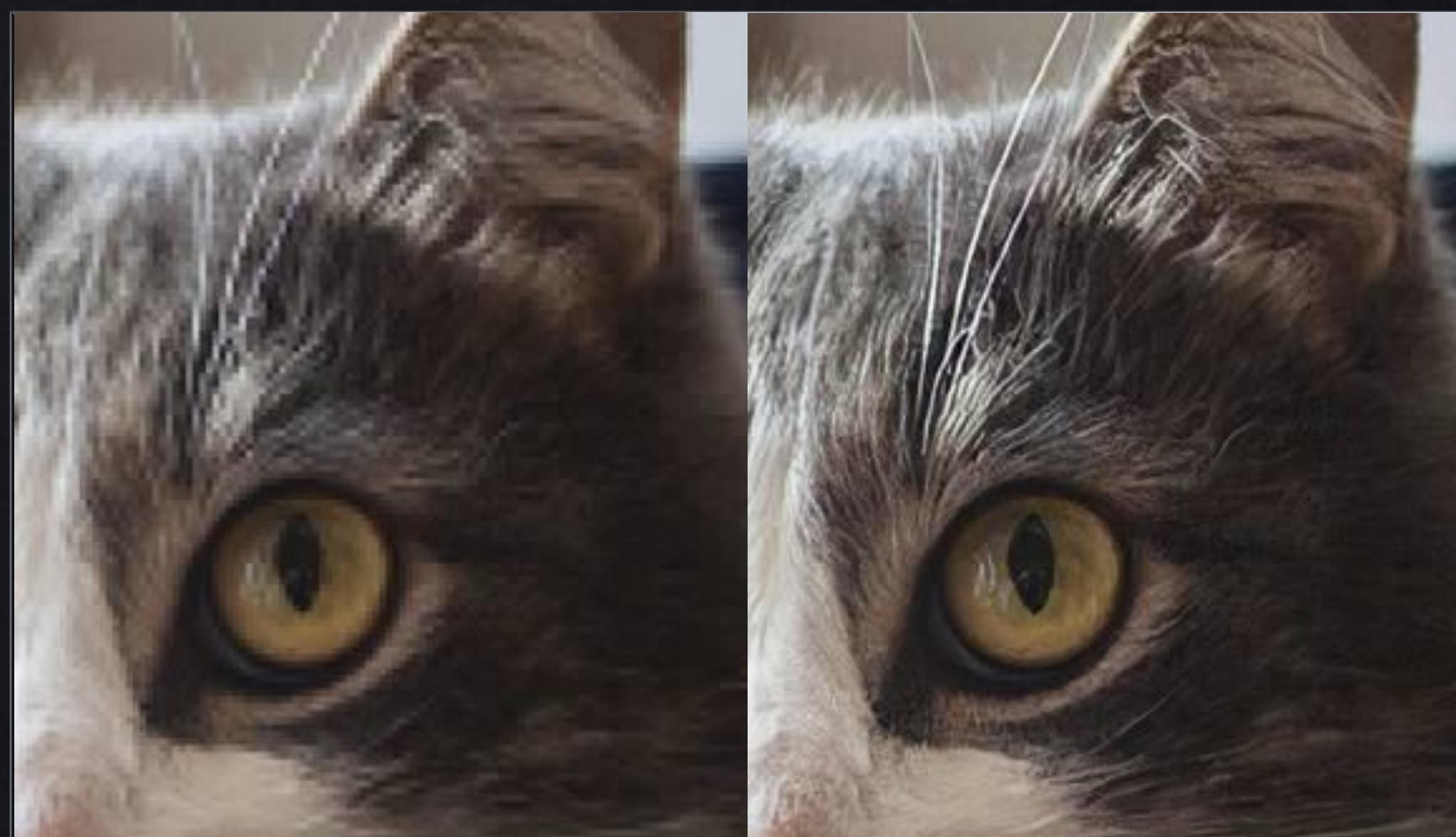
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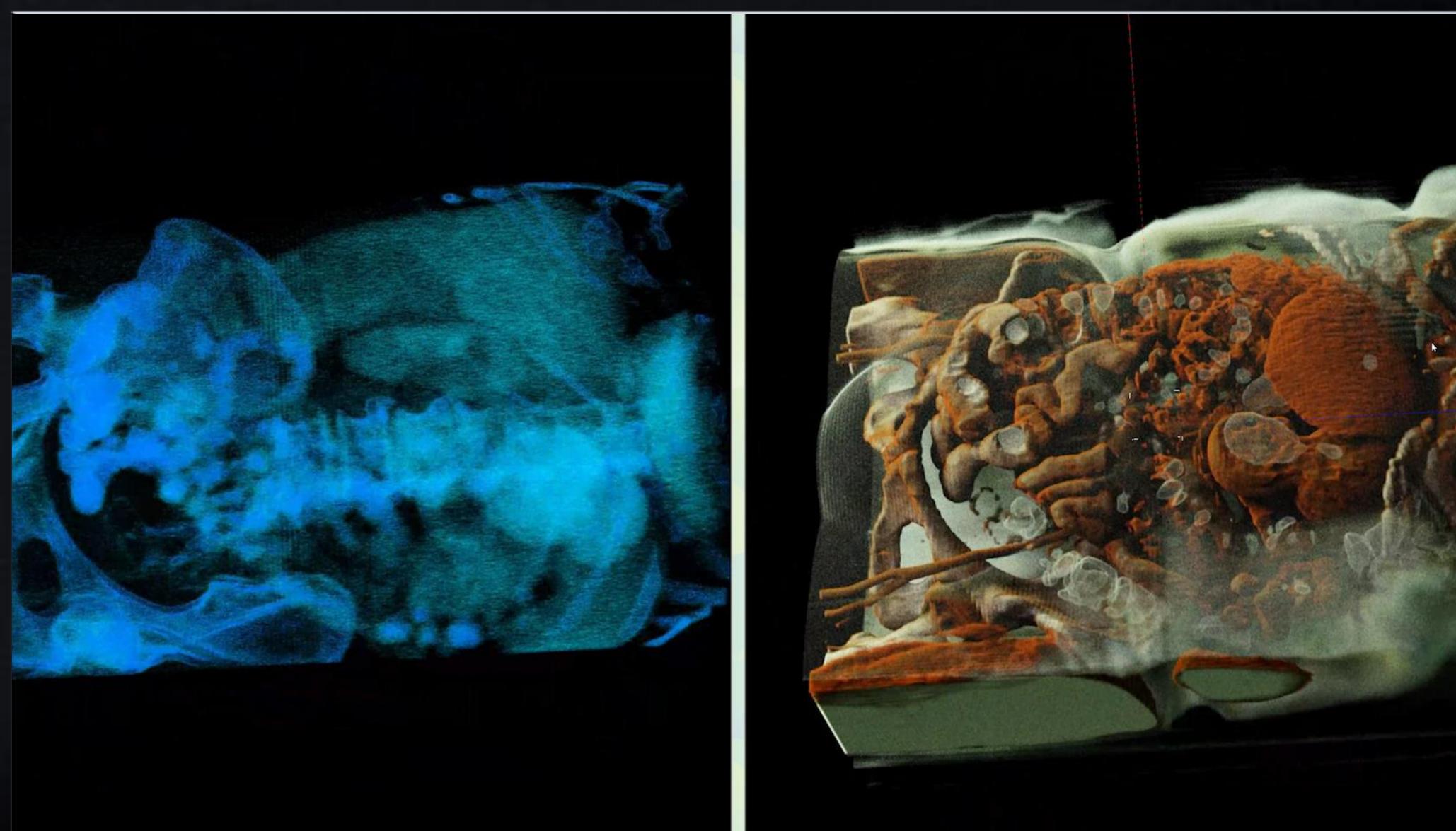
SEGMENTATION
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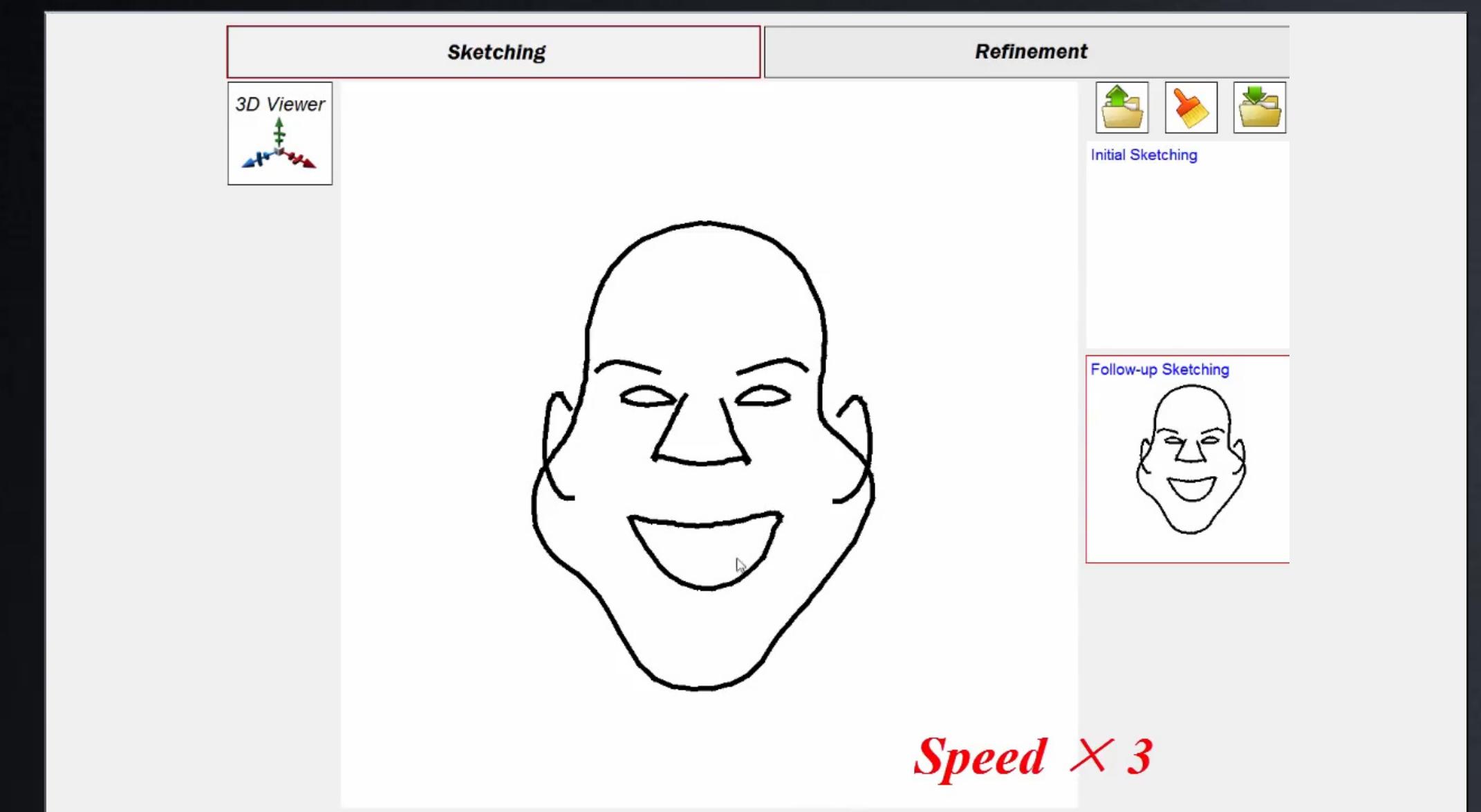
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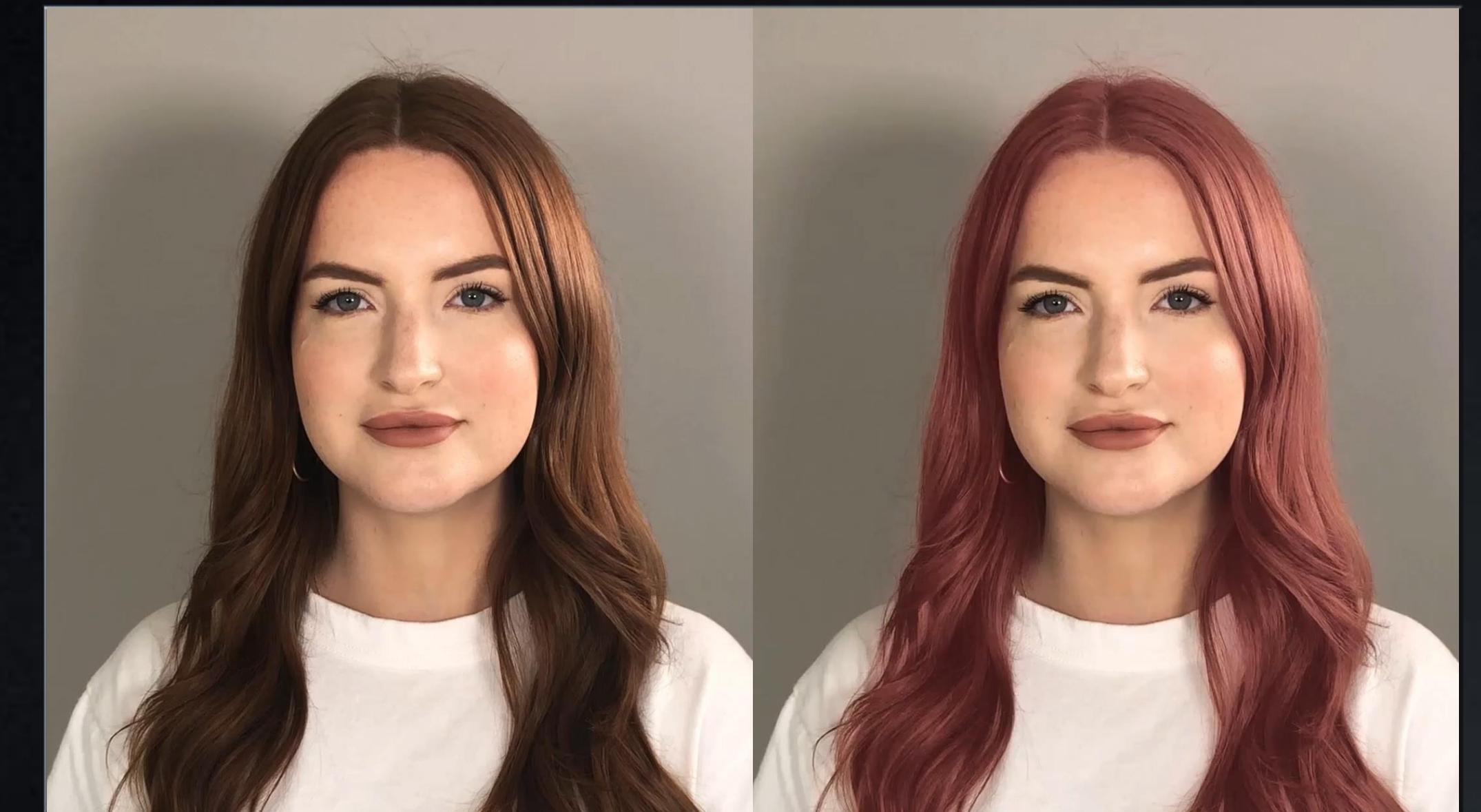
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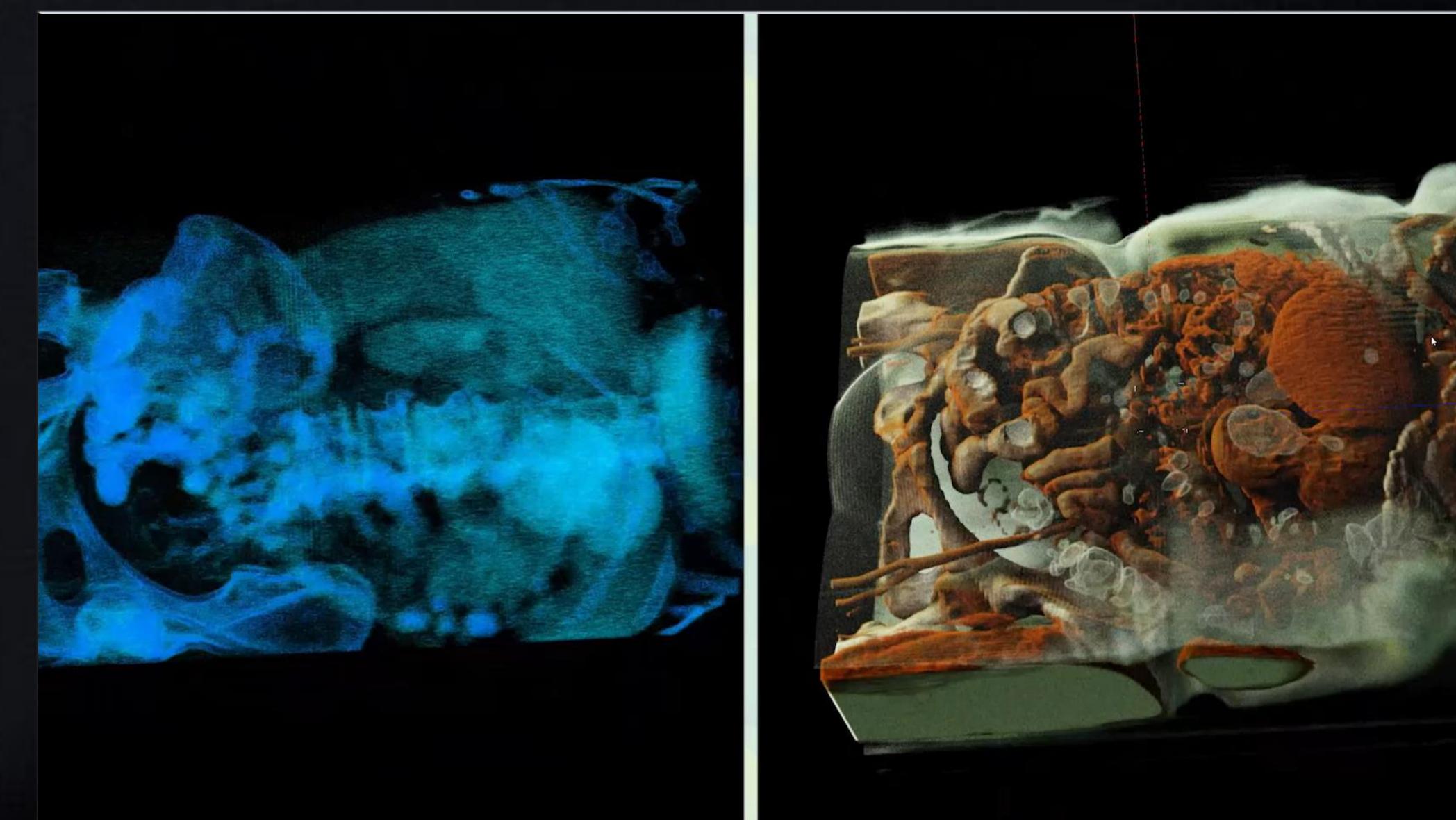
SEGMENTATION
NVIDIA



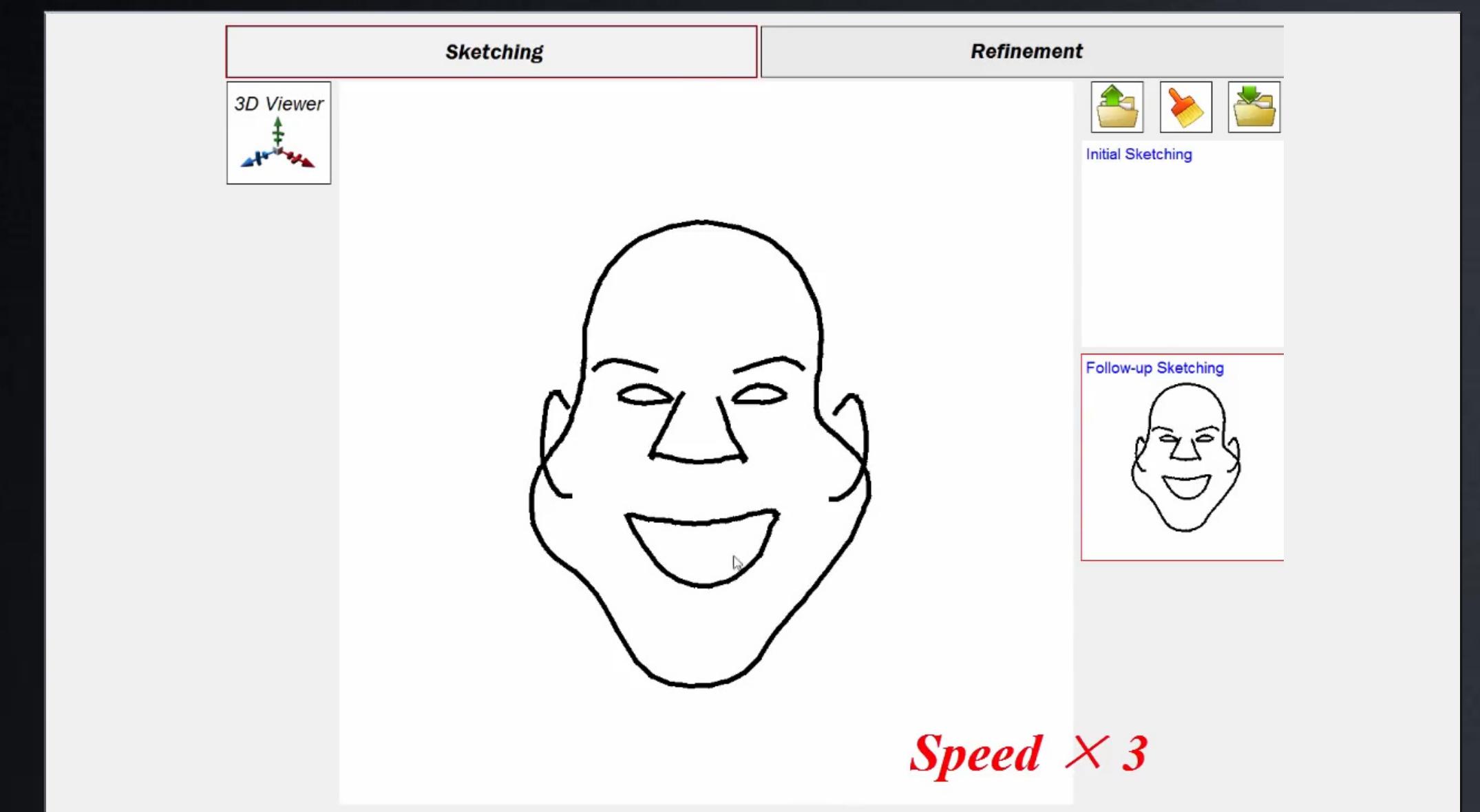
COLORIZING HAIR
L'Oréal



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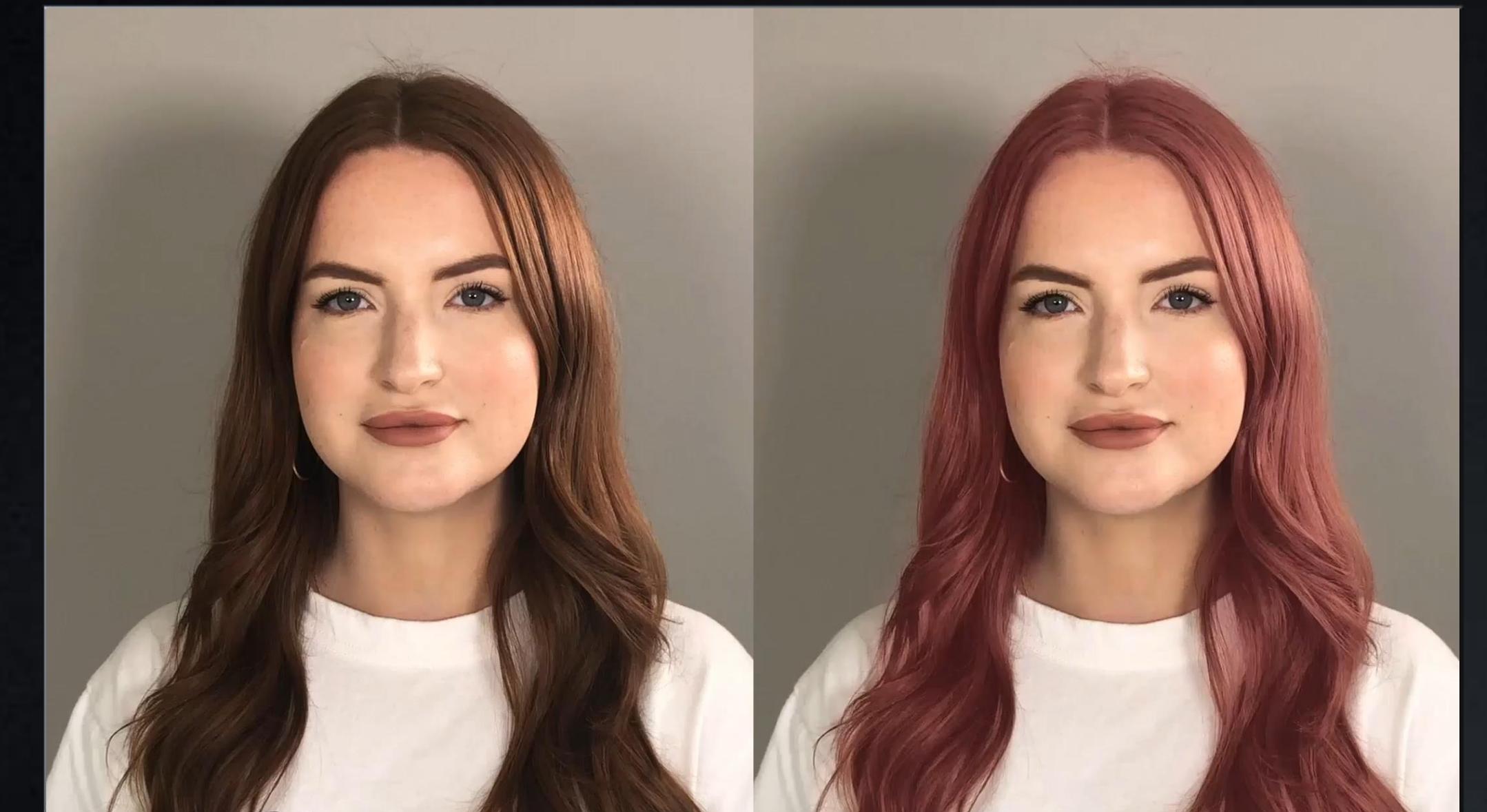
MAGIC OF DEEP LEARNING



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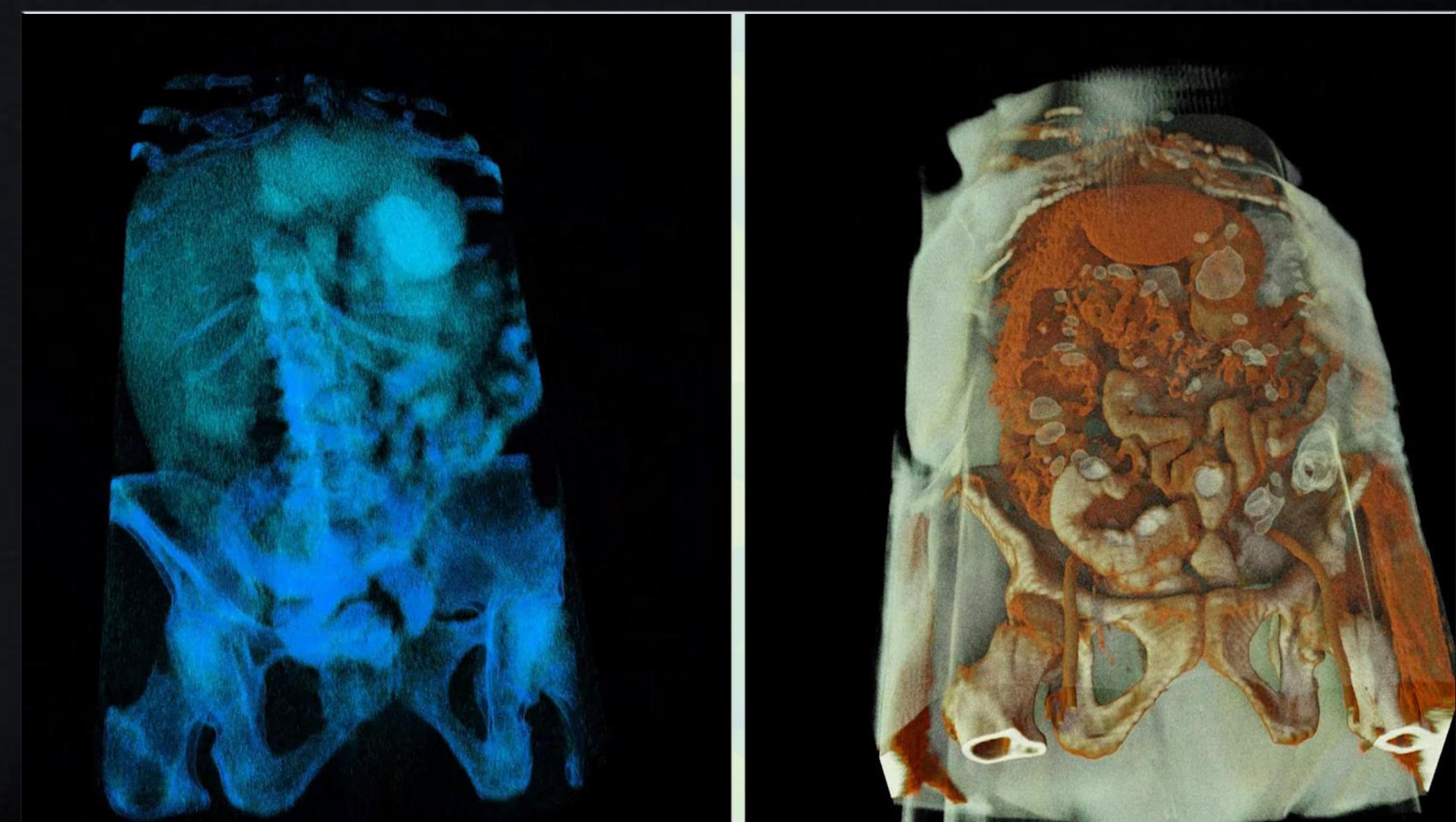
SEGMENTATION
NVIDIA



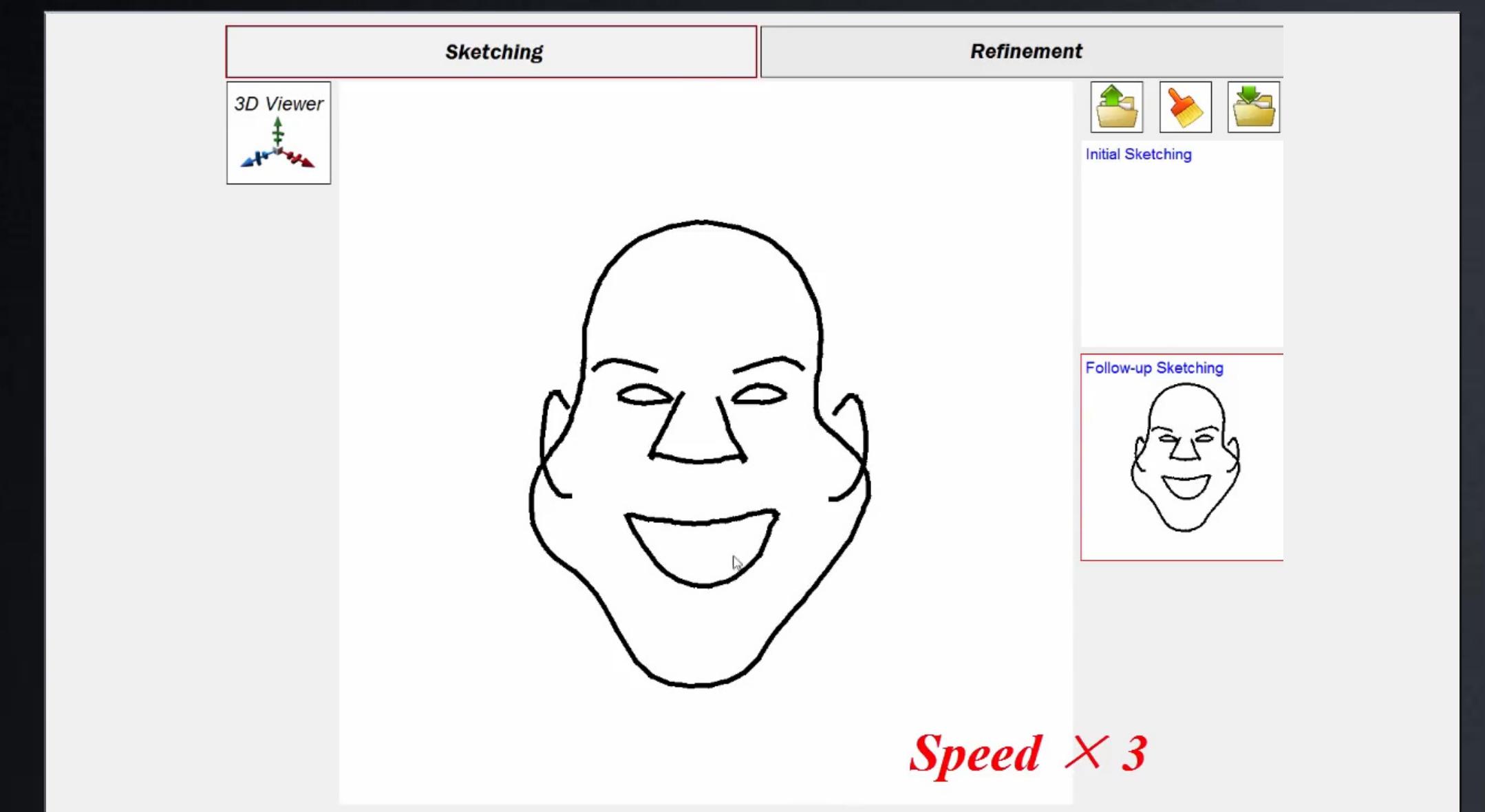
COLORIZING HAIR
L'Oréal



SUPER RESOLUTION
NVIDIA



CLARA MEDICAL IMAGING
NVIDIA



SKETCH 2 FACE
NVIDIA

MAGIC OF DEEP LEARNING



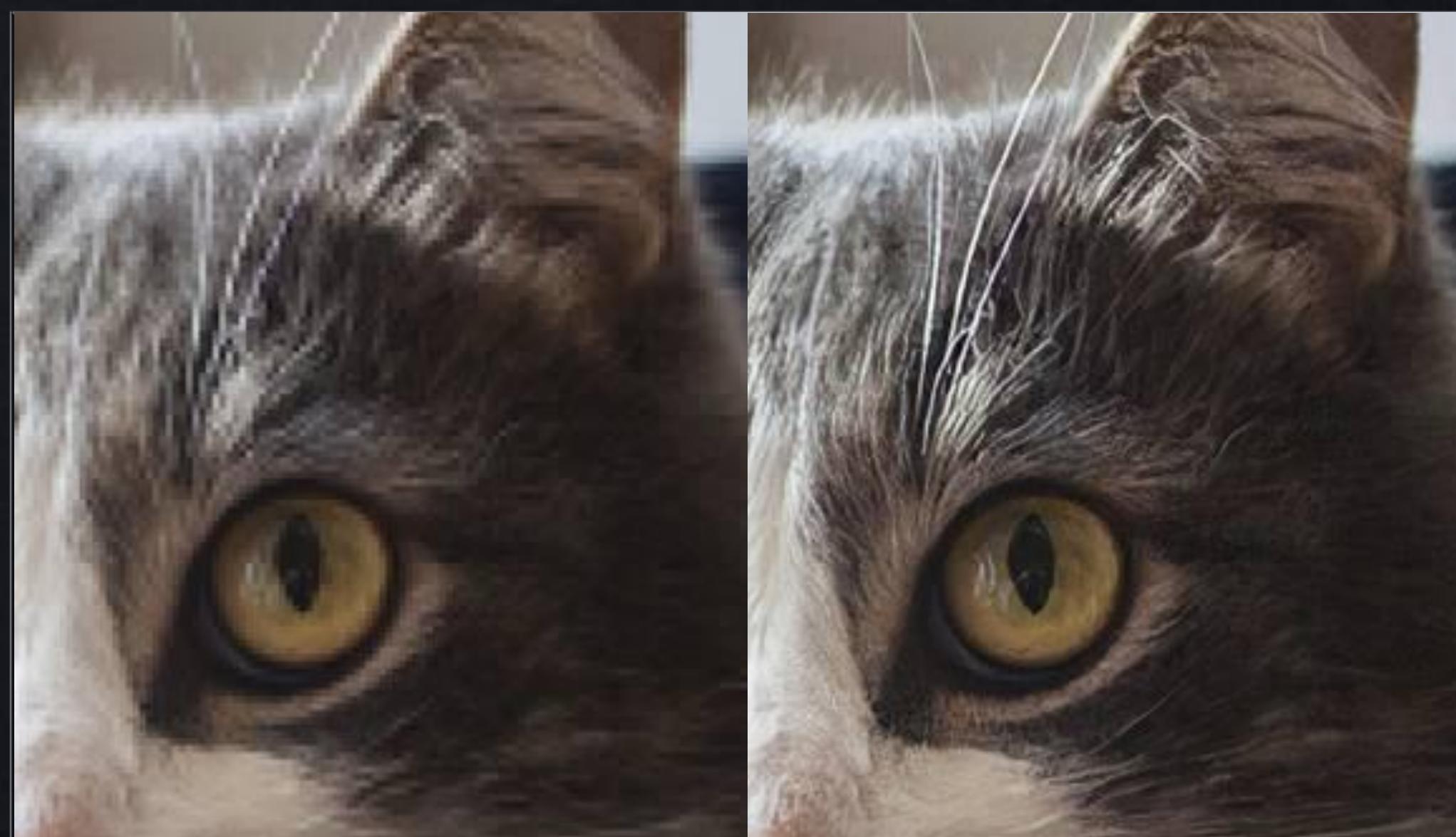
COLORIZE IMAGES
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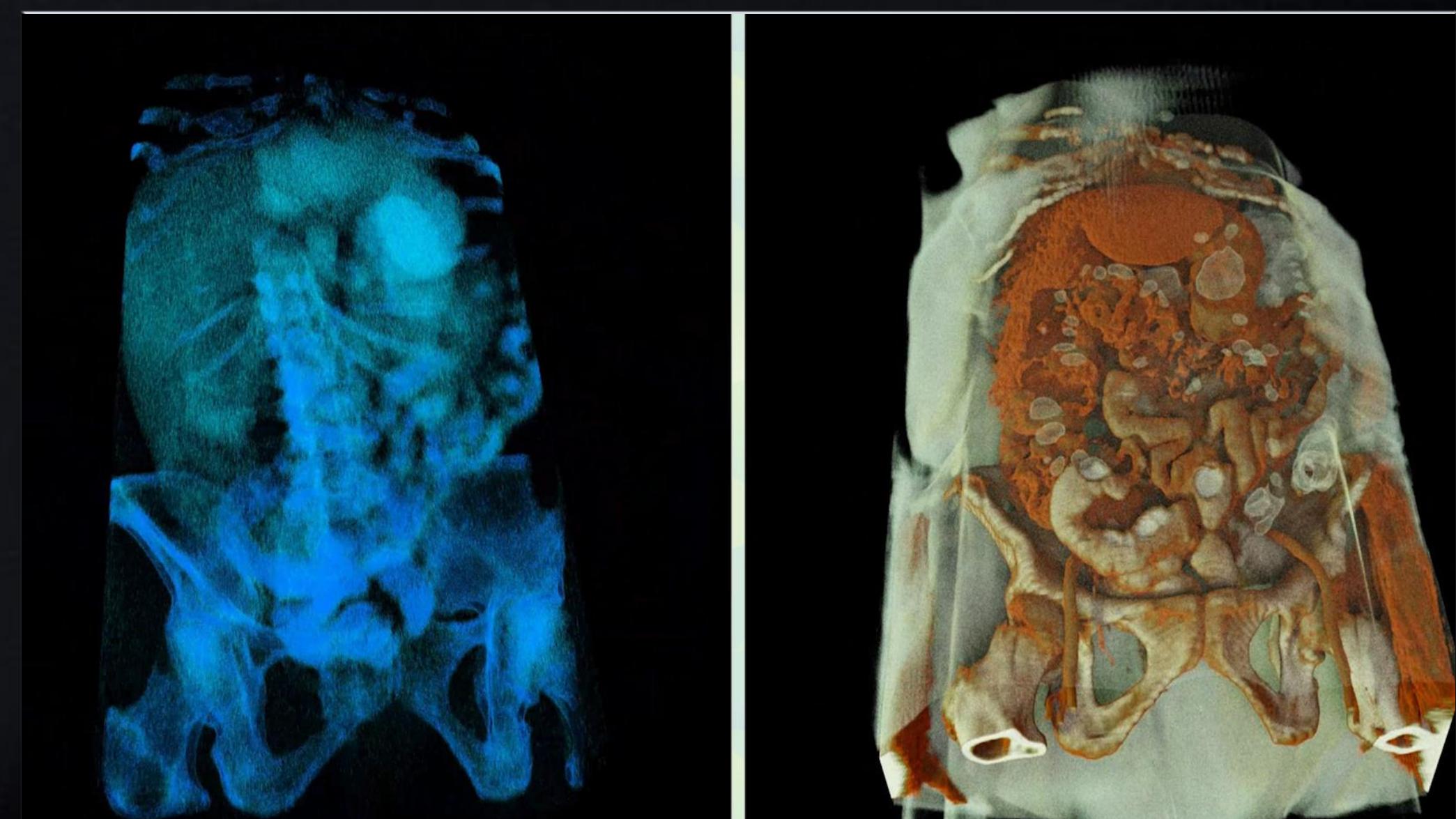
SEGMENTATION
NVIDIA



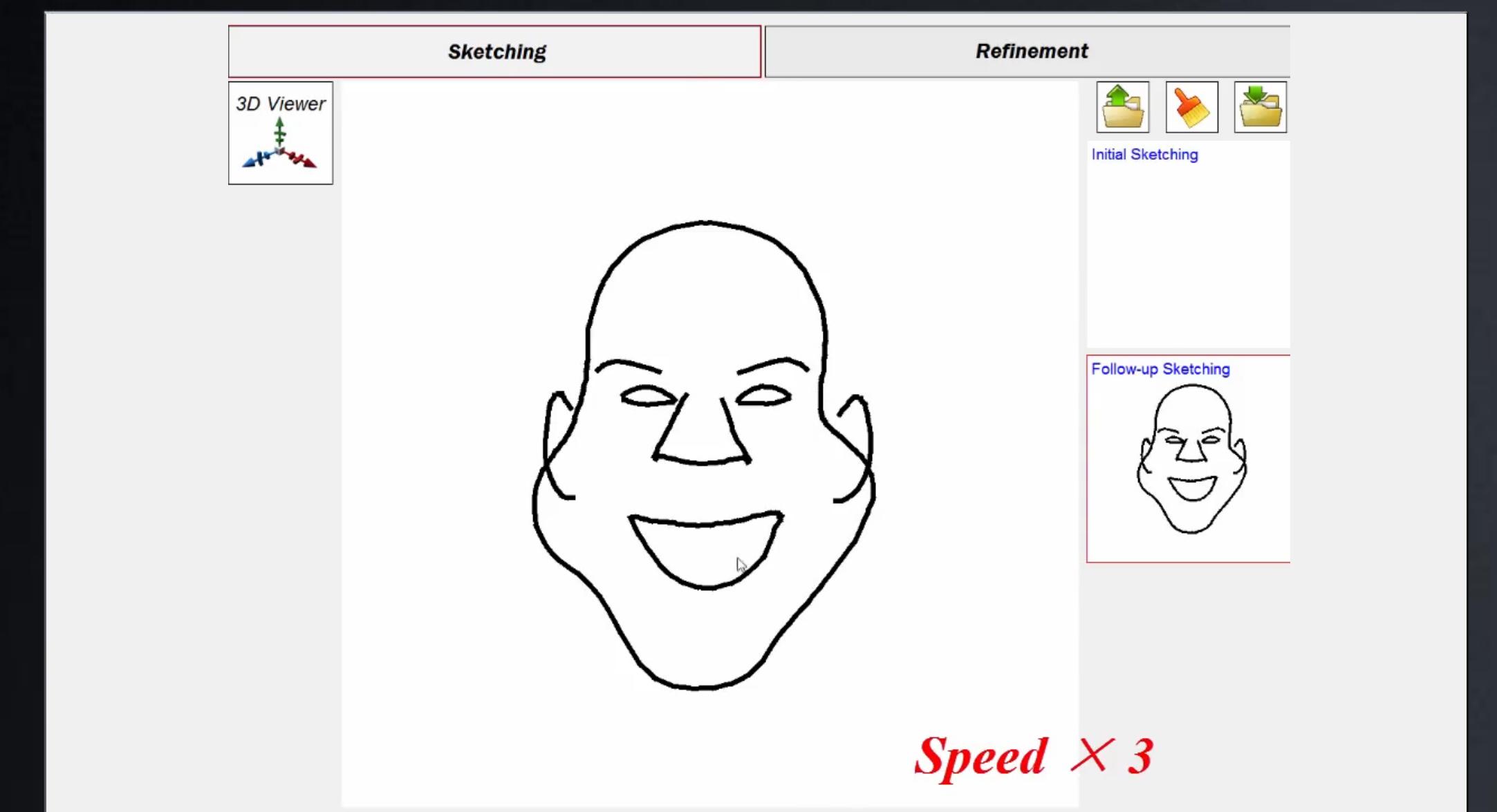
COLORIZING HAIR
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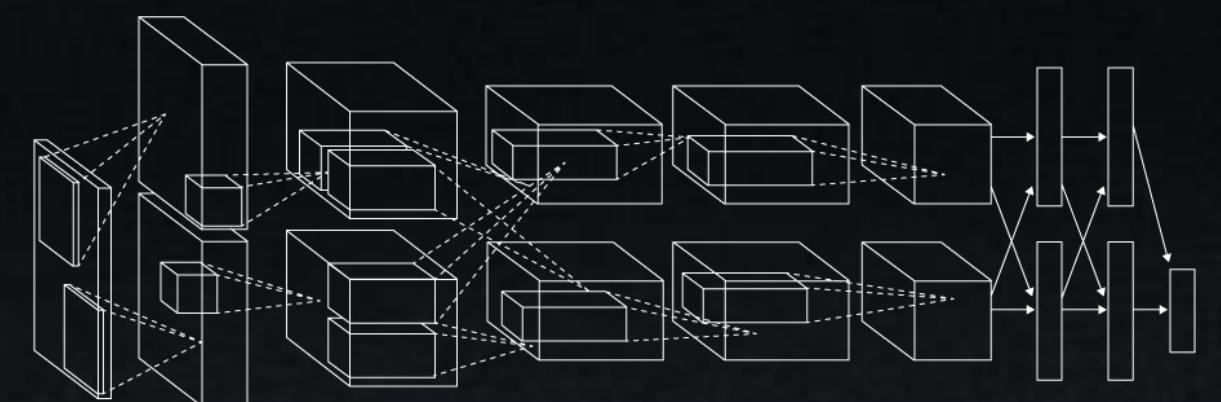
CLARA MEDICAL IMAGING
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TENSOR CORE DNN PROCESSOR

Convolutional Networks



Encoder/Decoder

ReLU

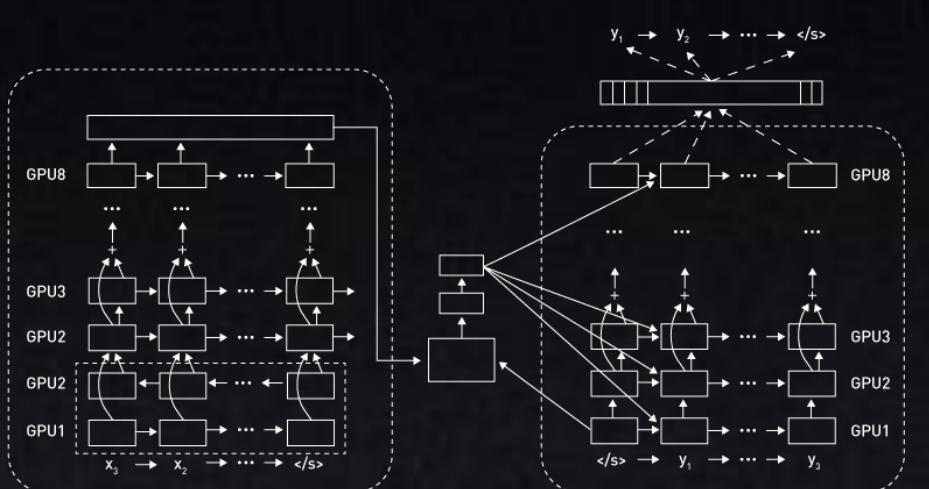
BatchNorm

Concat

Dropout

Pooling

Recurrent Networks



LSTM

GRU

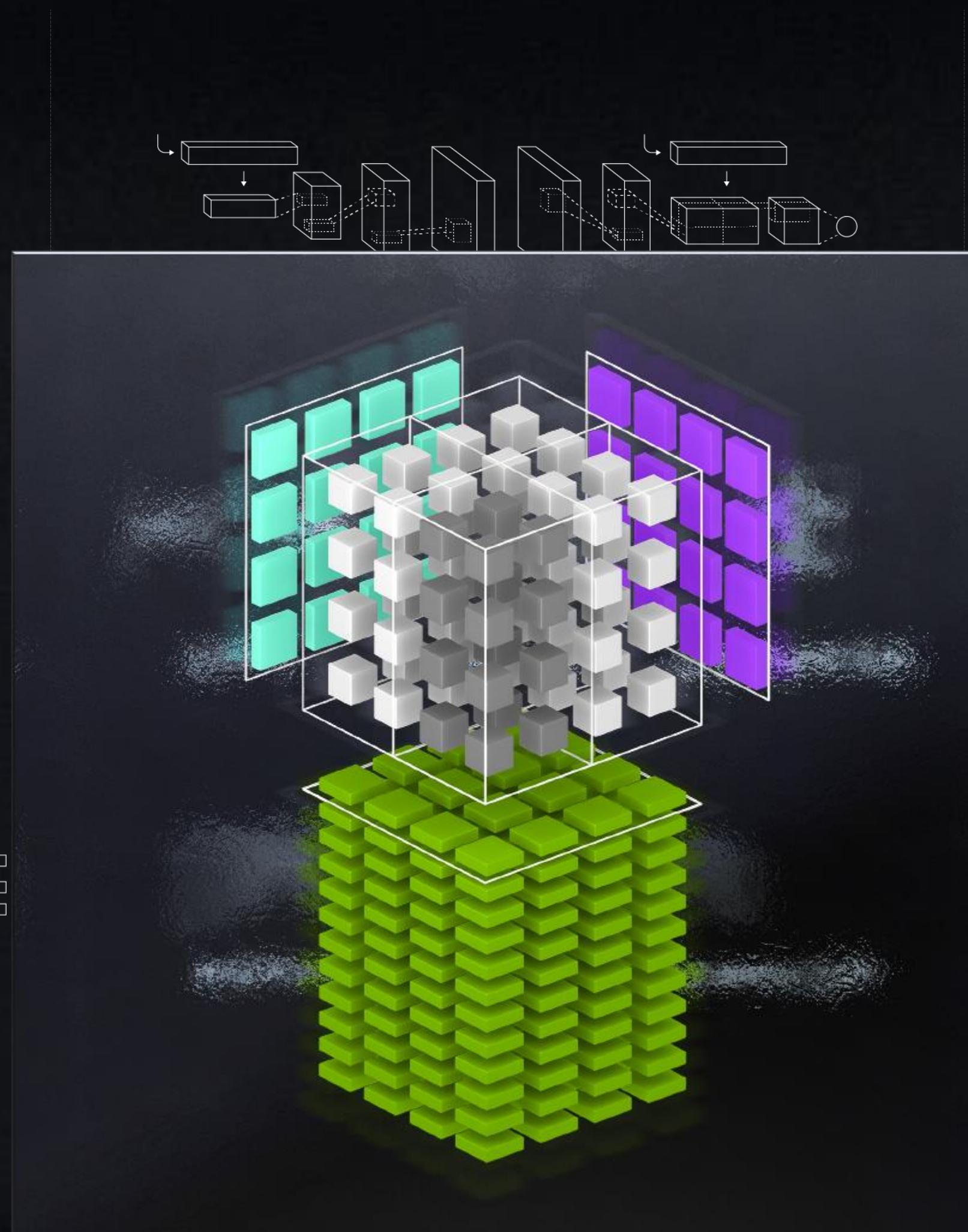
Beam Search

WaveNet

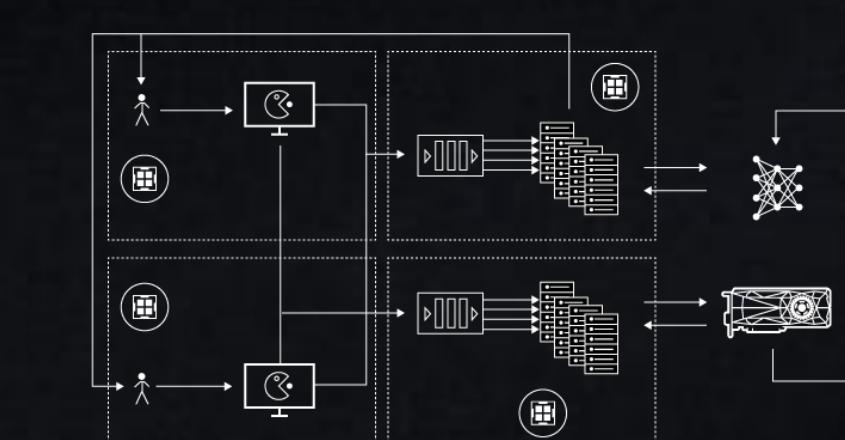
CTC

Attention

Generative Networks



Reinforcement Learning

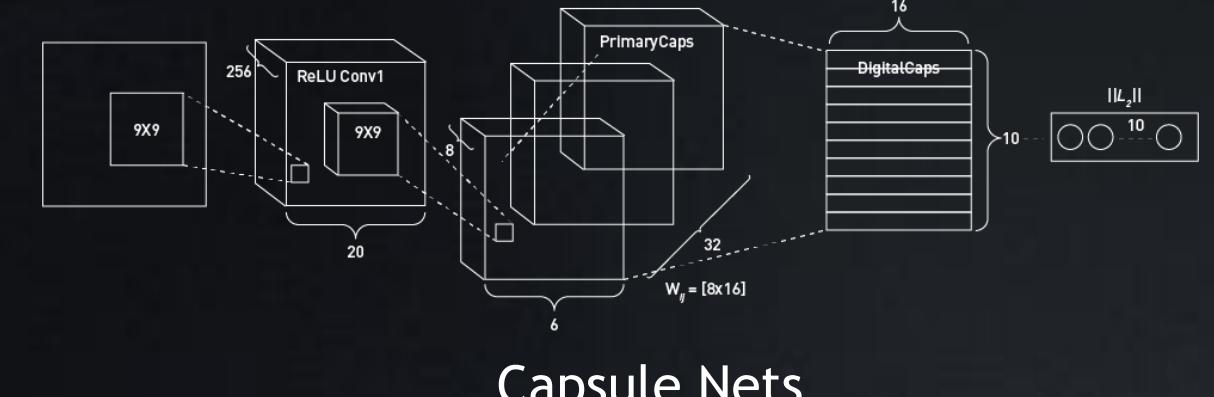


DQN

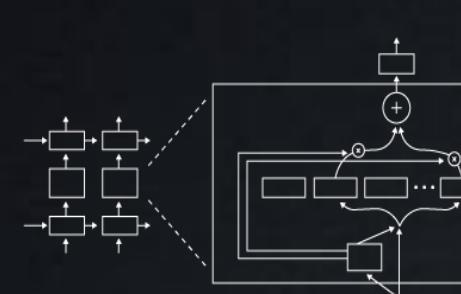
Simulation

DDPG

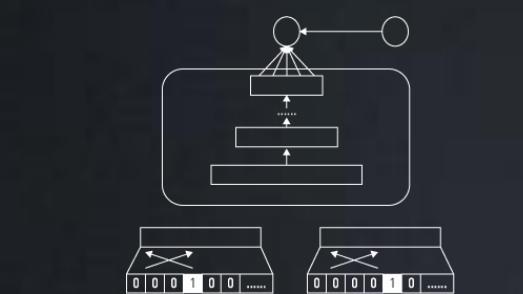
New Species



Capsule Nets



Mixture of Experts

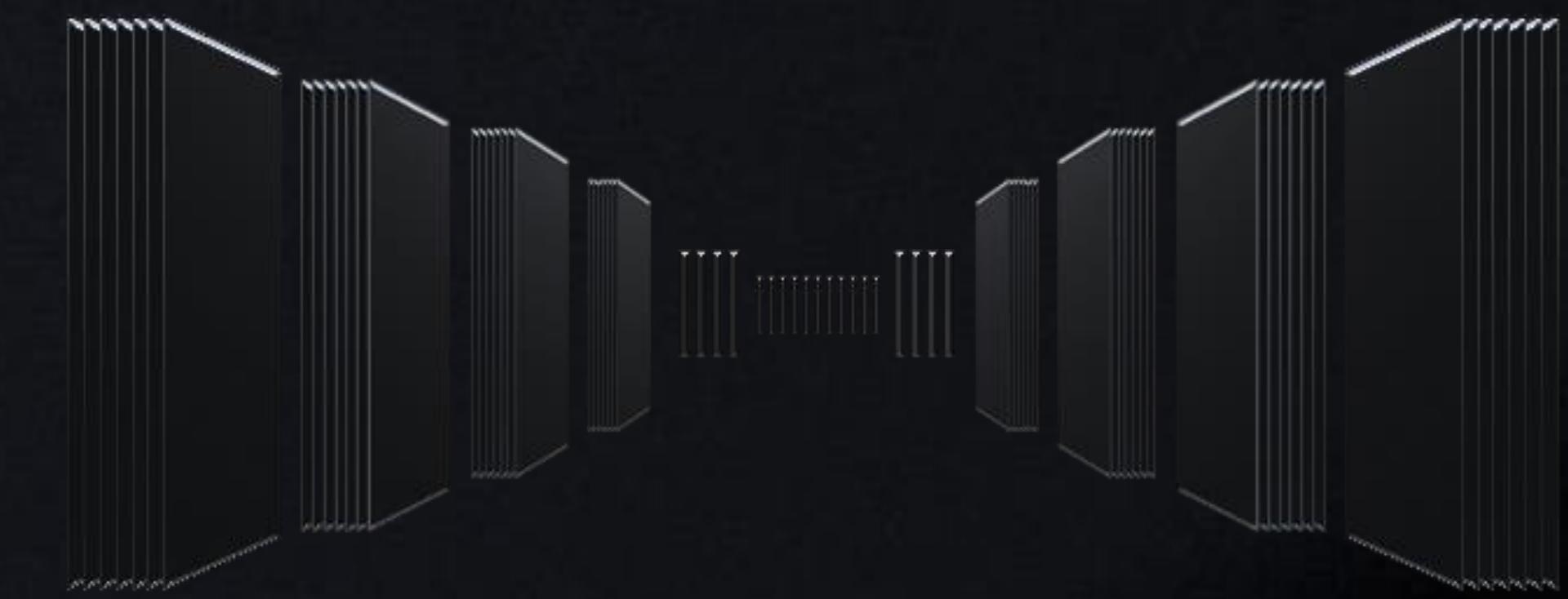


Neural Collaborative Filtering

Block Sparse LSTM

NVIDIA DLSS

BREAKTHROUGH IN HIGH-QUALITY MOTION IMAGE GENERATION



Temporally Stable
Convolutional Autoencoder
~500 Billion FP16 Ops



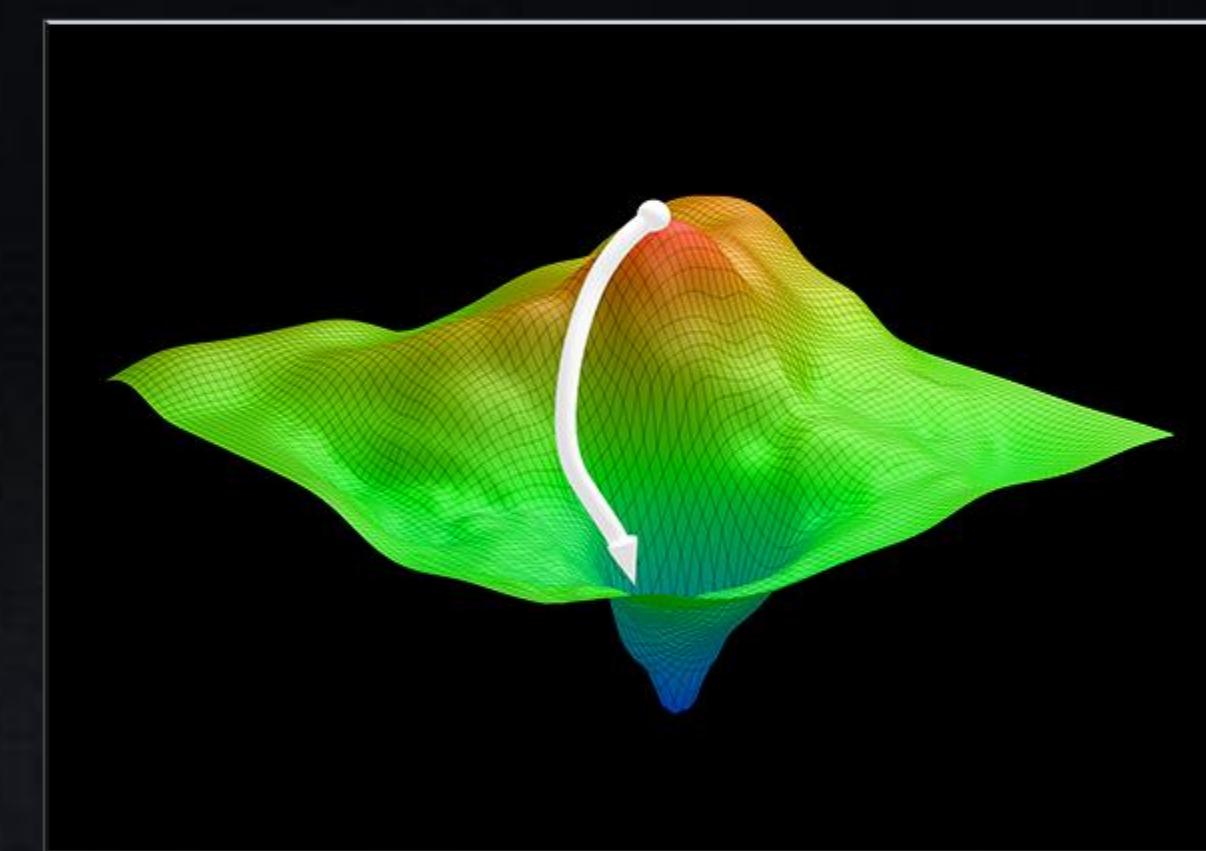
Ground Truth
Super High Quality Image
64 Jittered Sample Rendering

NVIDIA NGX

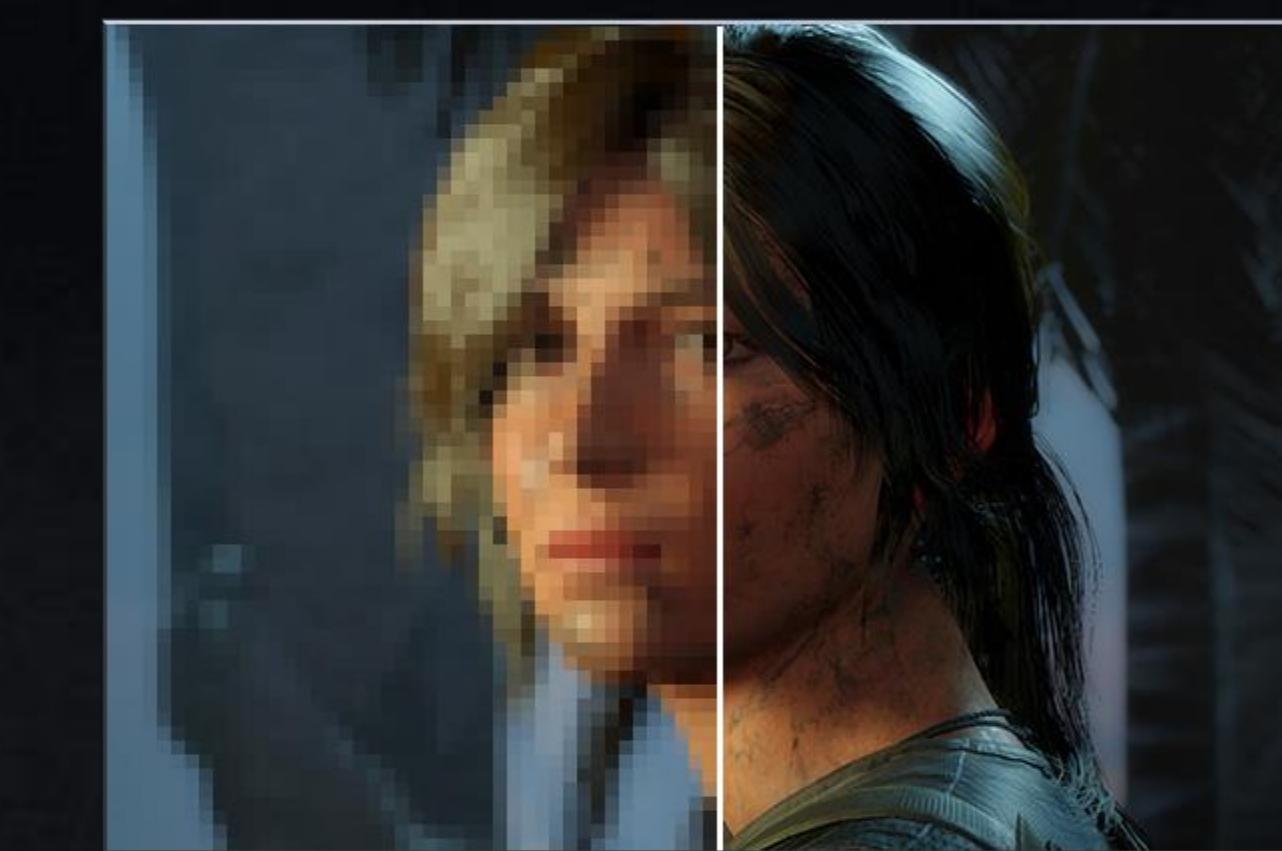
NEURAL GRAPHICS FRAMEWORK FOR AI IMAGE PROCESSING



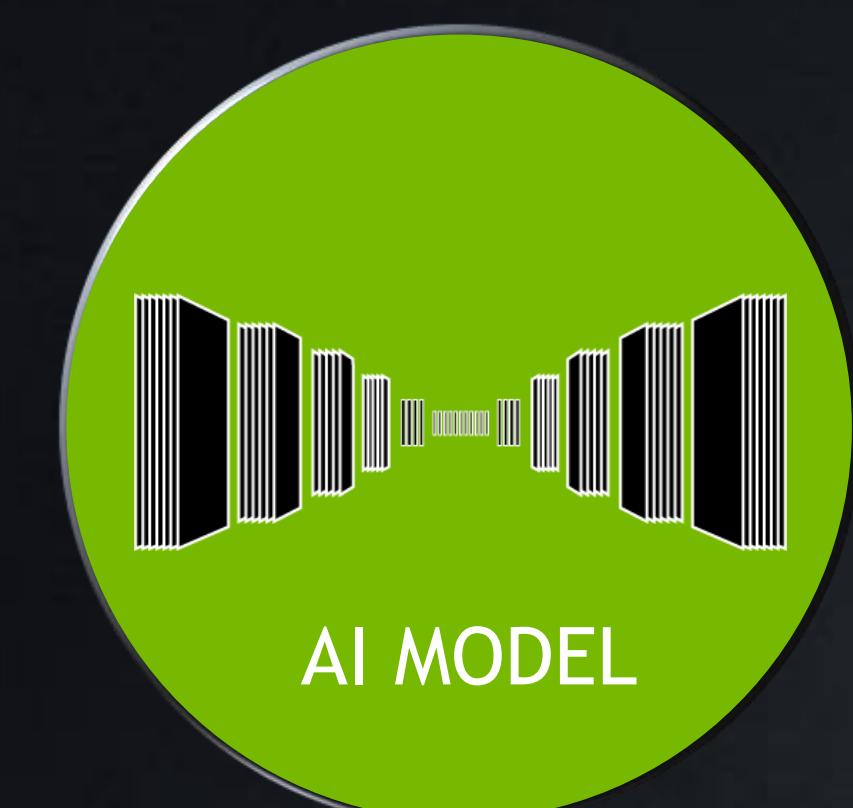
GENERATE GROUND TRUTH



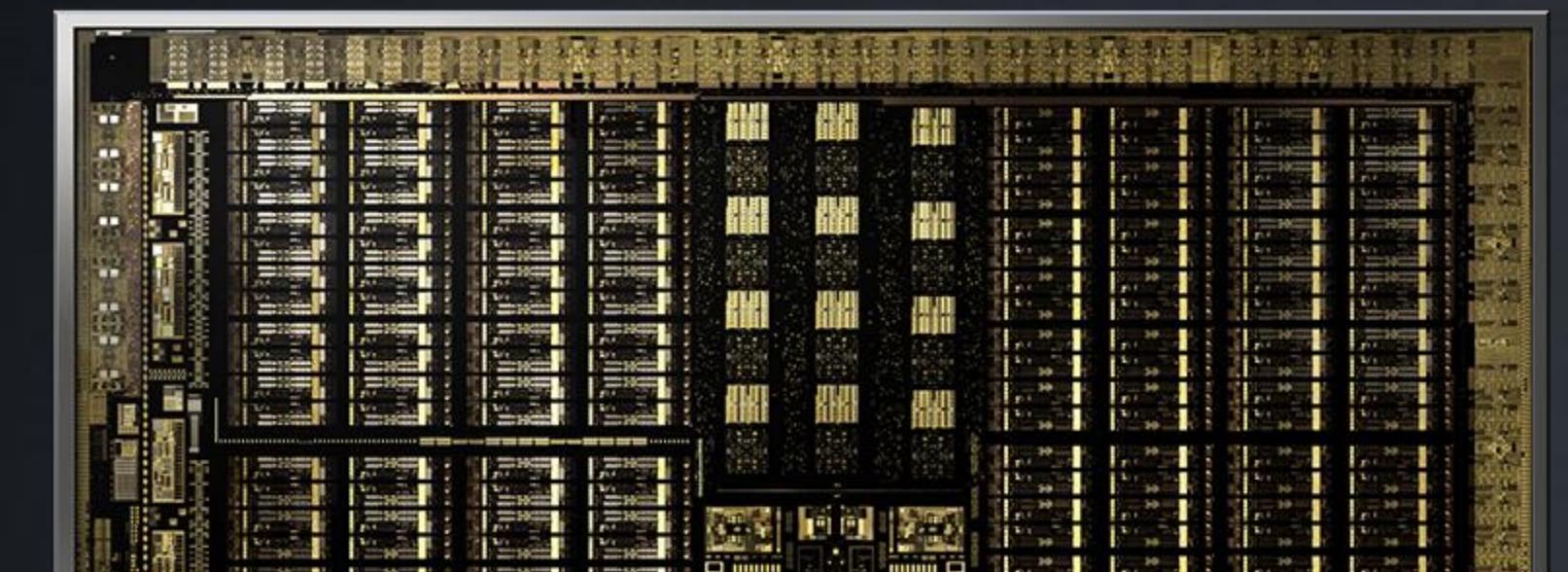
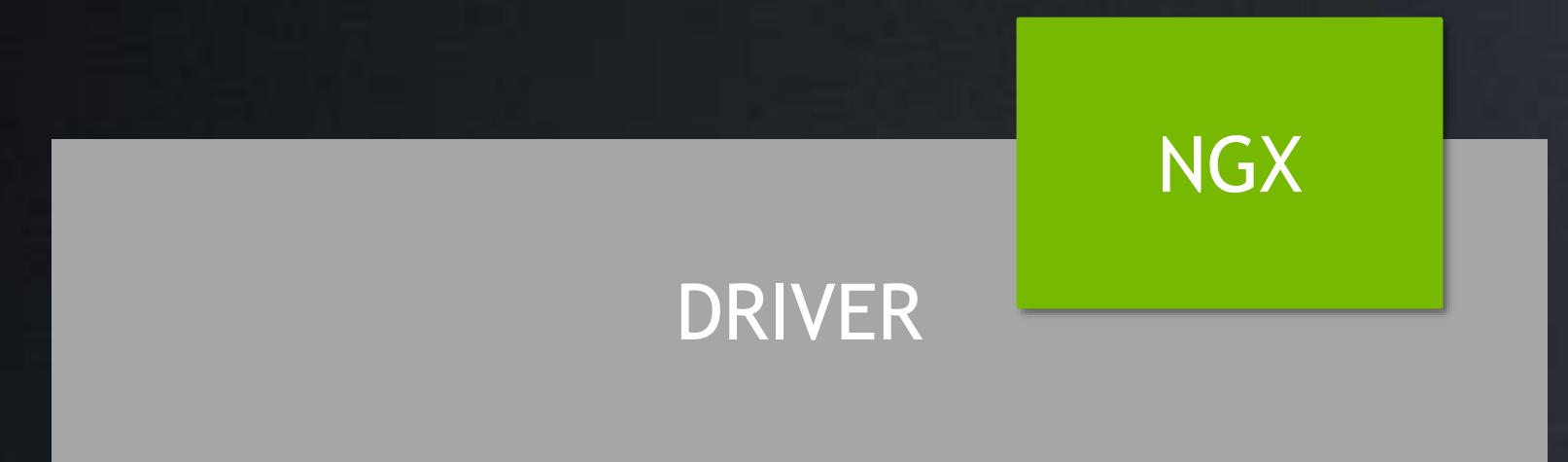
TRAIN AI MODEL



TEST & OPTIMIZE



AI MODEL

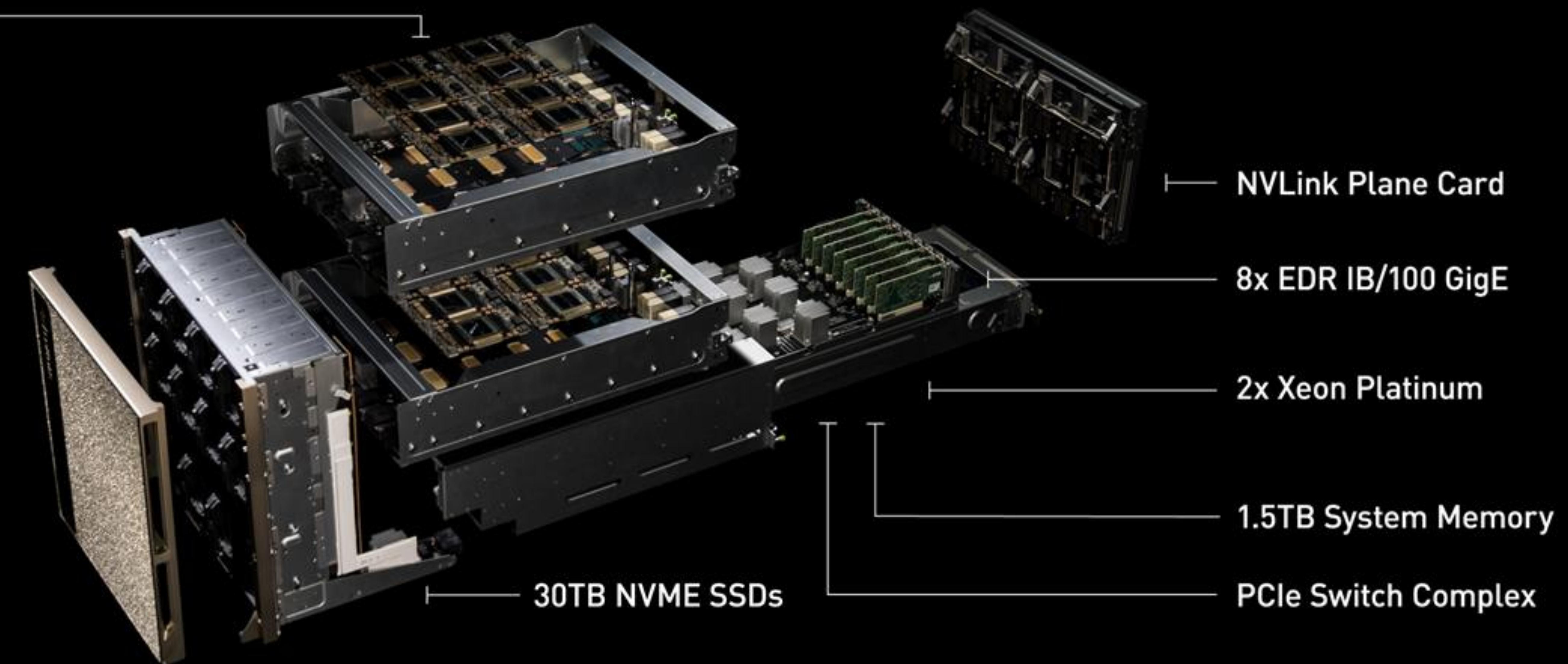


NGX WORKFLOW CREATES AI MODELS

NVIDIA DGX-2

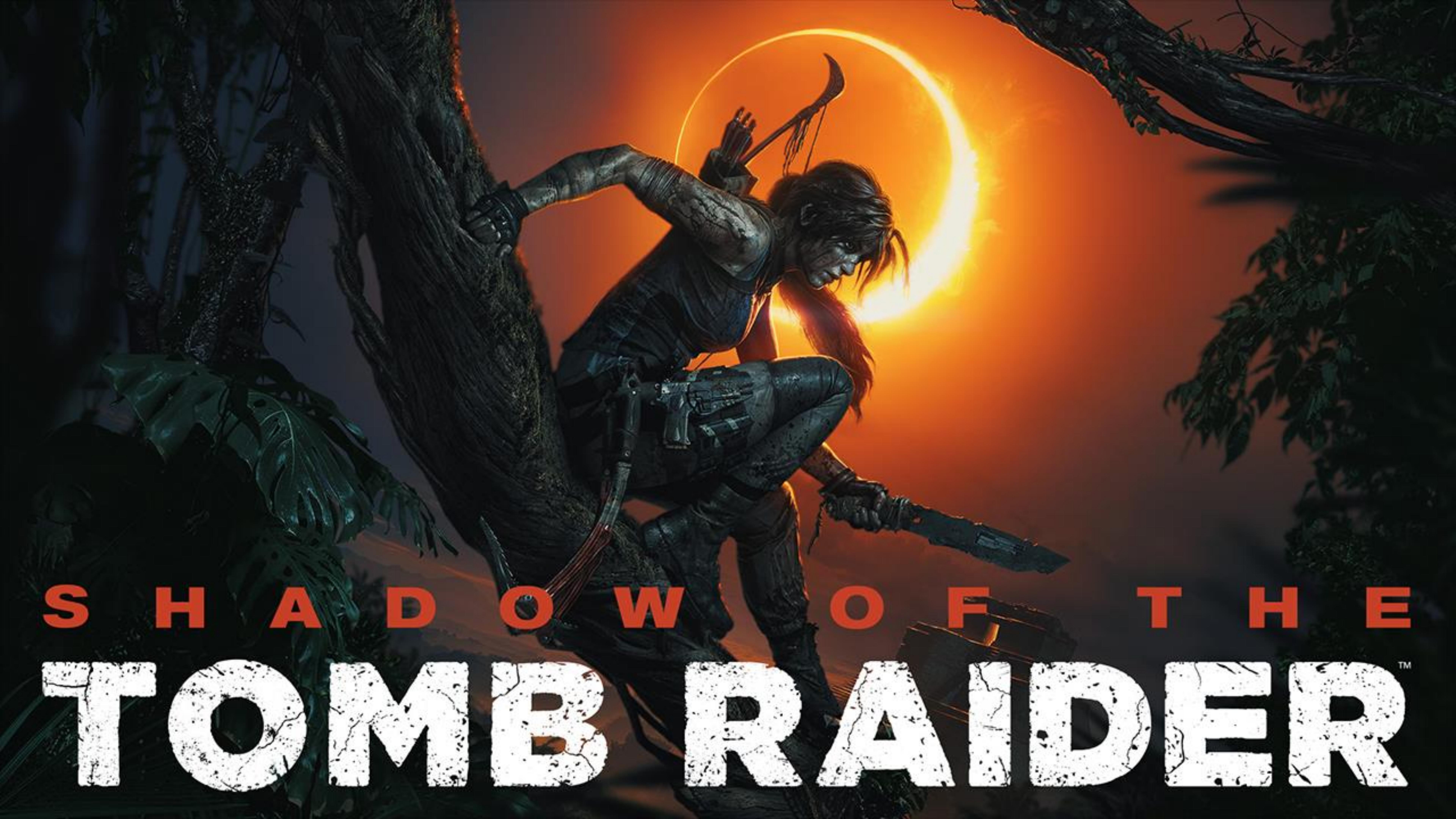
THE LARGEST GPU EVER CREATED

16x Tesla V100 32GB
12x NVSwitch



2 PFLOPS | 512GB HBM2 | 10 kW | 350 lbs





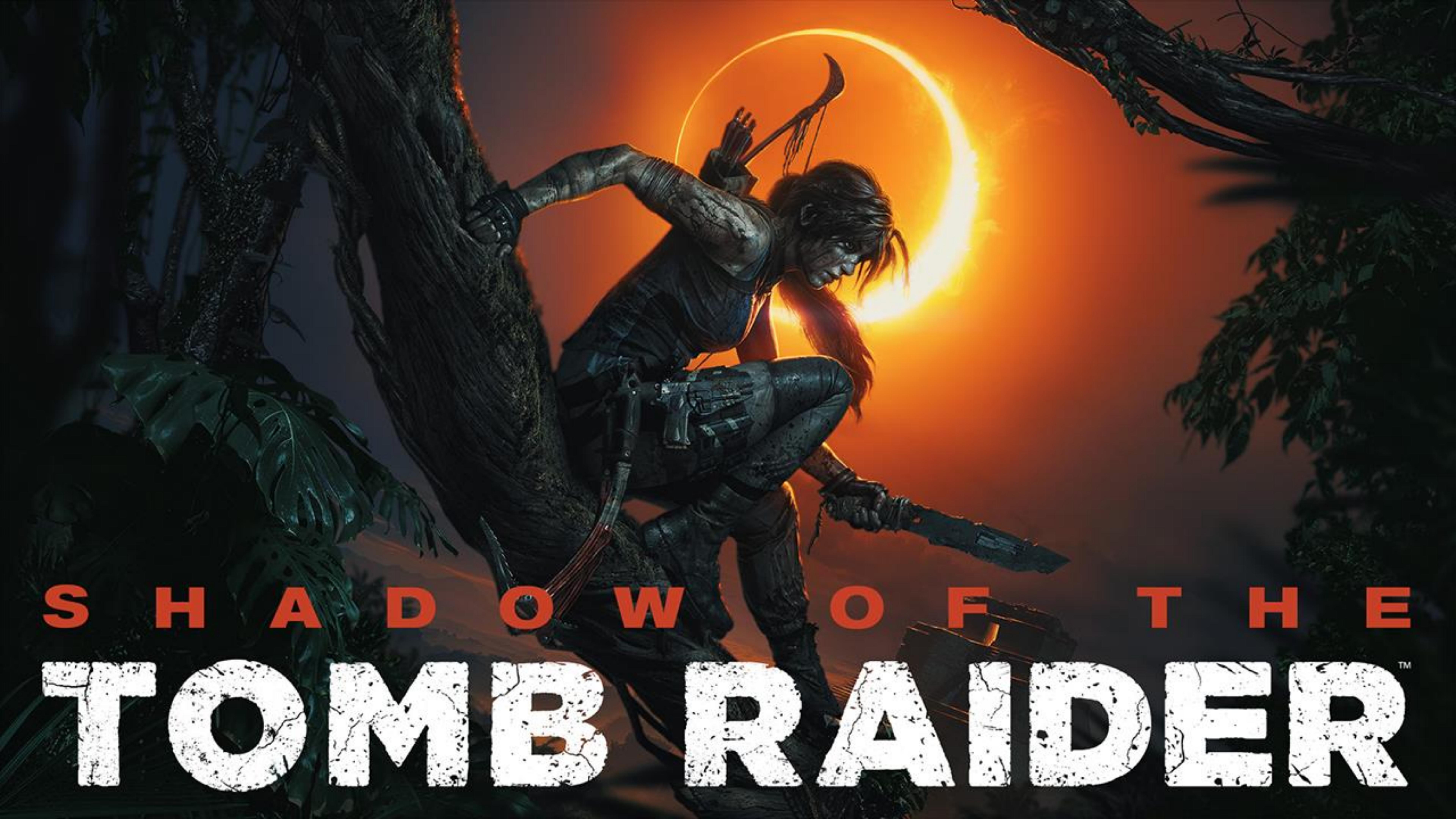
SHADOW OF THE
TOMBRAIDER™



SHADOW OF THE
TOMB RAIDER

**RTX
ON**

Ray Traced
Shadows



SHADOW OF THE
TOMBRAIDER™

A woman with long, light-colored hair stands on a set of train tracks that recede into a bright, golden sunset. She is wearing a dark, tattered jacket and pants. The tracks are surrounded by a landscape of overgrown vegetation, including a large tree with red leaves on the right. In the background, there are hills and a small, ornate building with a golden dome. The sky is filled with dark, swirling clouds and lightning bolts. The overall atmosphere is one of desolation and hope.

METRO EXODUS



METRO
EXODUS

RTX
ON

Global
Illumination

A woman with long, light-colored hair stands on a set of train tracks that recede into a bright, golden sunset. She is wearing a dark, tattered jacket and pants. The tracks are surrounded by a landscape of overgrown vegetation, including a large tree with red leaves on the right. In the background, there are hills and a small, ornate building with a golden dome. The sky is filled with dark, swirling clouds and lightning bolts. The overall atmosphere is one of desolation and hope.

METRO EXODUS



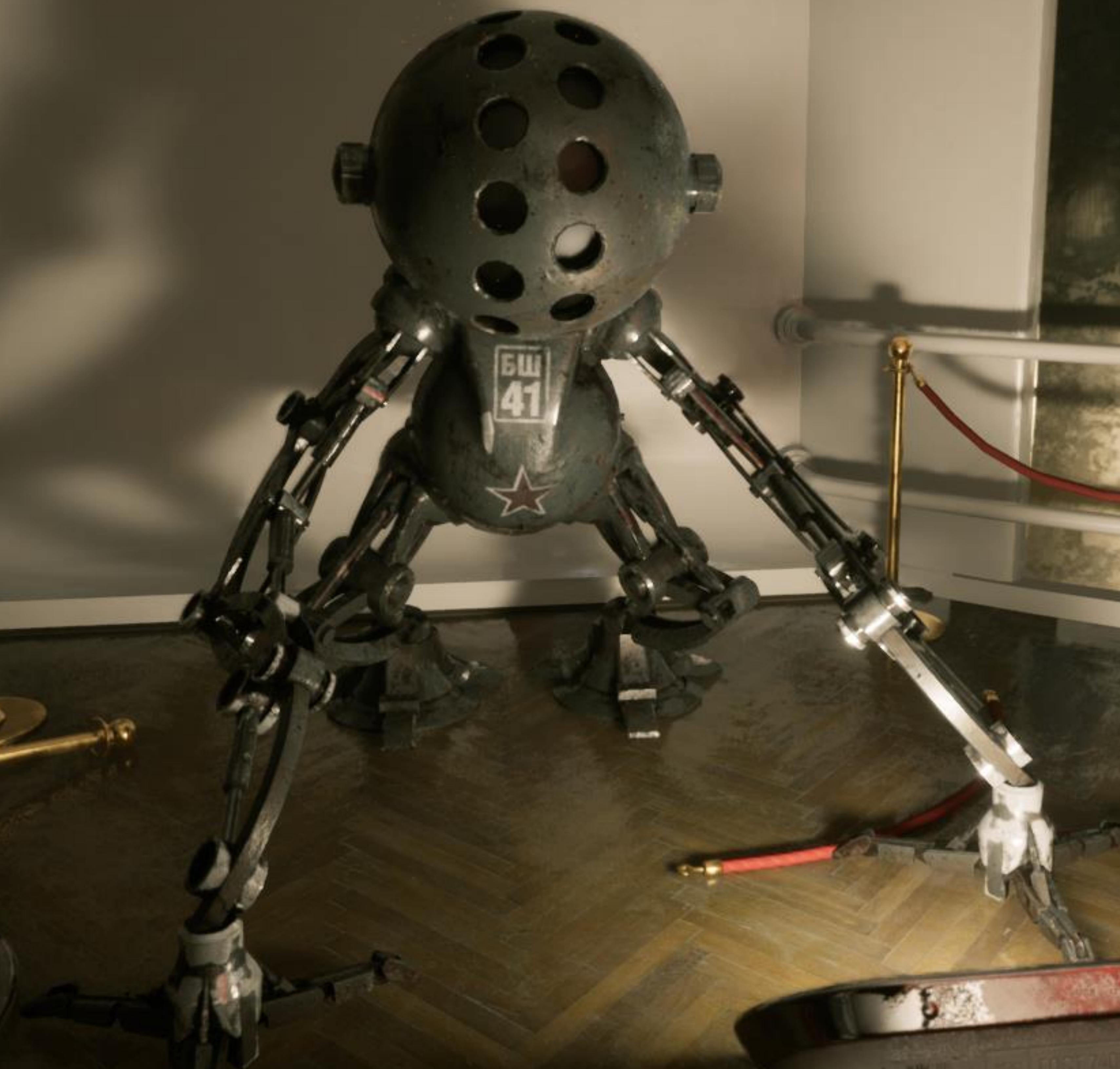


ATOMIC HEART



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МА-9**

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ON**

BATTLEFIELD V

RTX ALPHA

RTX
ON

BATTLEFIELD V



BATTLEFIELD VTM

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SEPTEMBER 4

AVAILABLE FOR EVERYONE
SEPTEMBER 6



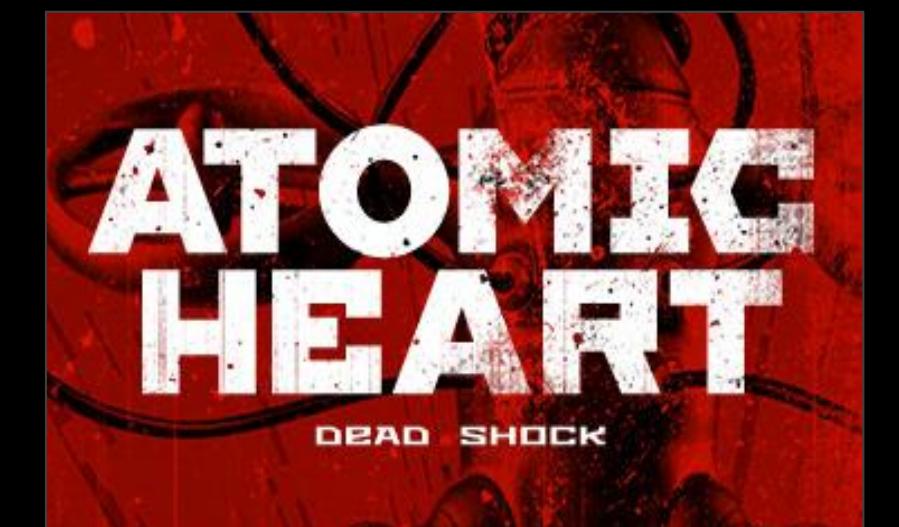
RTX GAMES COMING SOON



Ark: Survival
Evolved



Assetto Corsa
Competizione



Atomic Heart



Battlefield V



Control



Dauntless



In Death



Enlisted



Final Fantasy XV



The Forge Arena



Fractured Lands



Hitman 2



Justice



JX3



Mechwarrior V:
Mercenaries



Metro Exodus



PlayerUnknown's
Battlegrounds



Remnant from
the Ashes



Serious Sam 4:
Planet Badass



Shadow of the
Tomb Raider



We Happy Few

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10 Giga Rays/s
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11 GB



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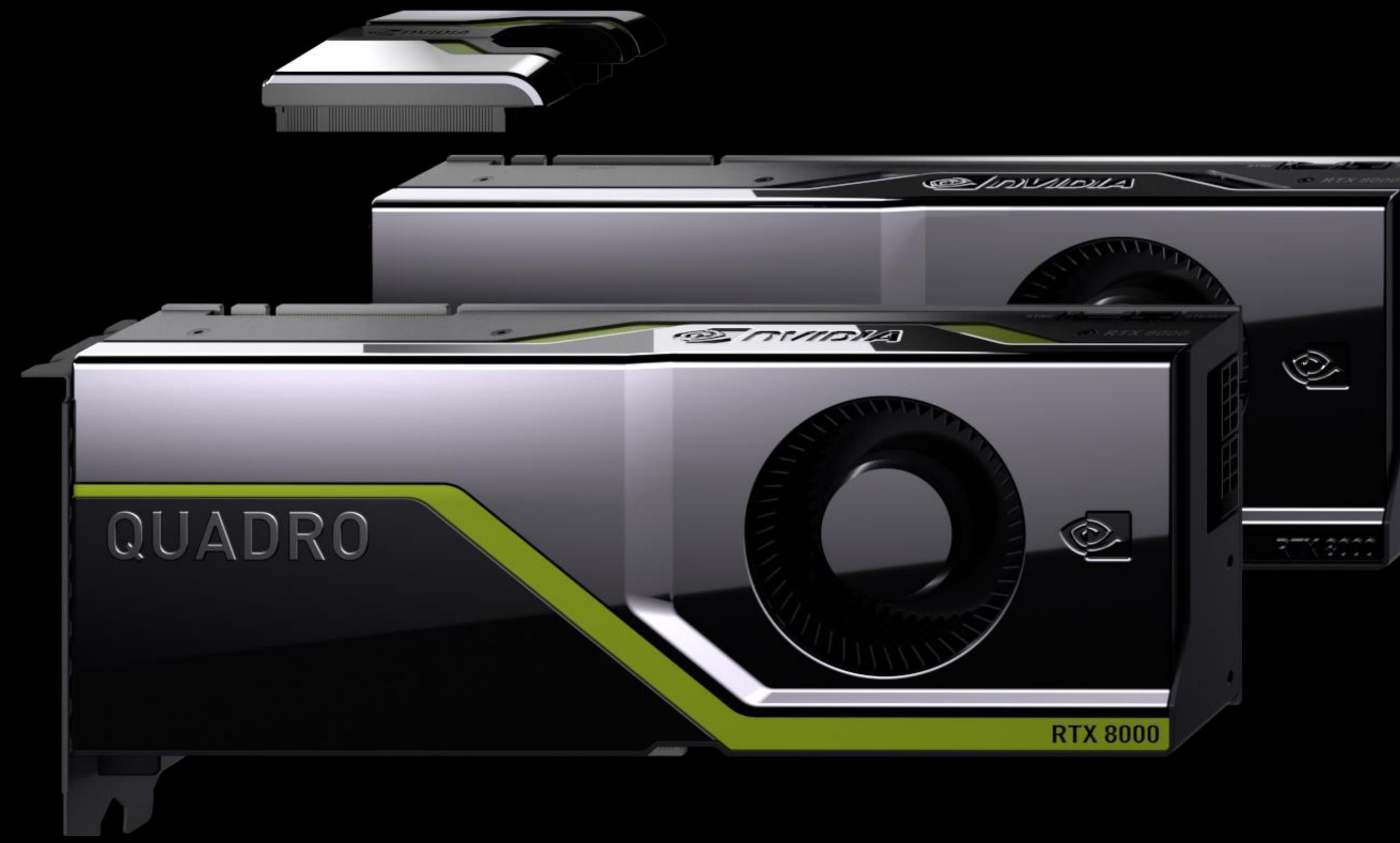
GEFORCE RTX

on-shelf

September 20



NVIDIA RTX FAMILY



QUADRO RTX 8000 (DUAL)
48+48 GB | 166T RTX-OPS | 20 GIGA RAYS

\$20,000



GEFORCE RTX 2080Ti
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GEFORCE RTX 2080
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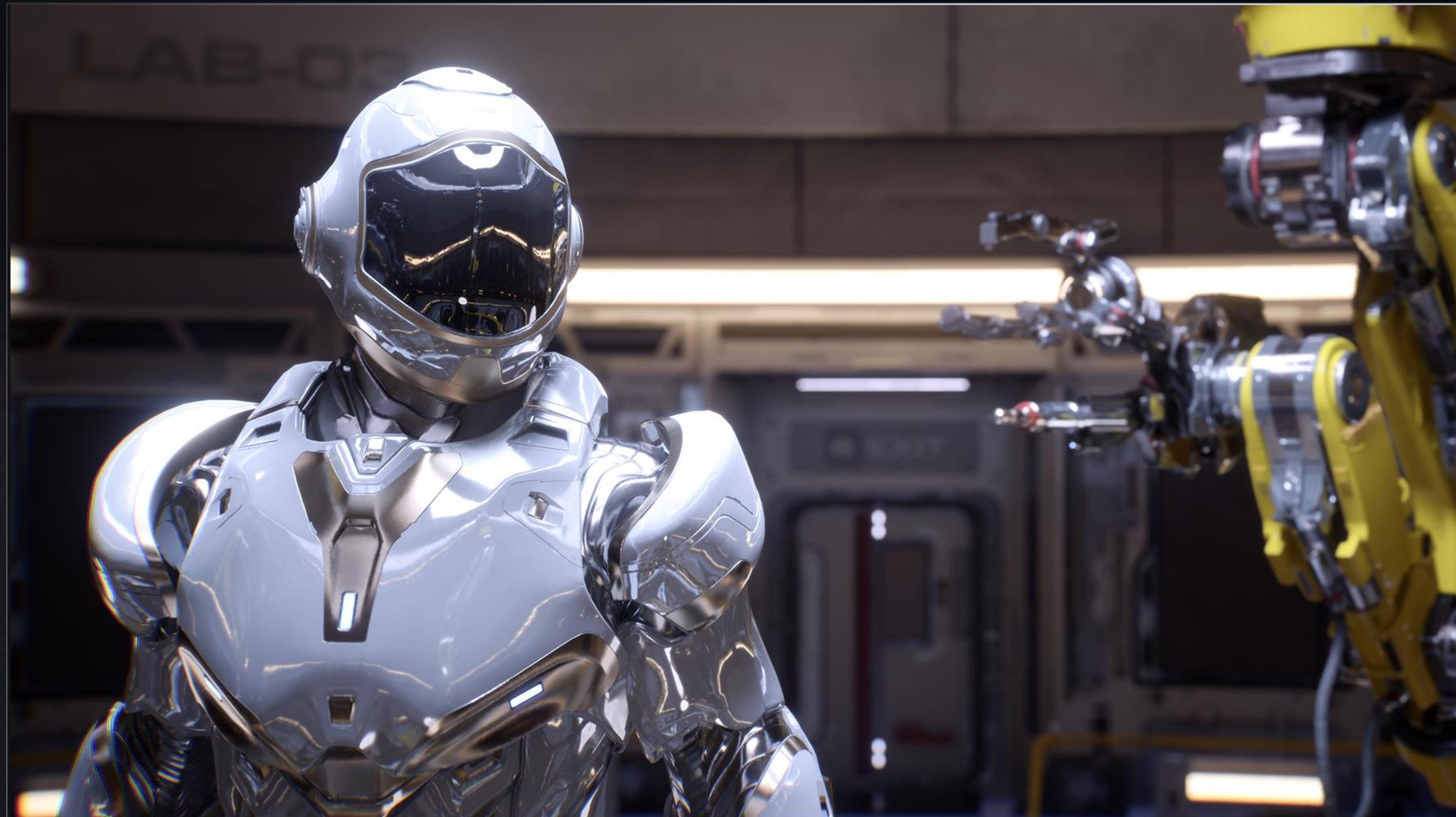
GEFORCE RTX 2070
8GB | 45T RTX-OPS | 6 GIGA RAYS

FROM \$499

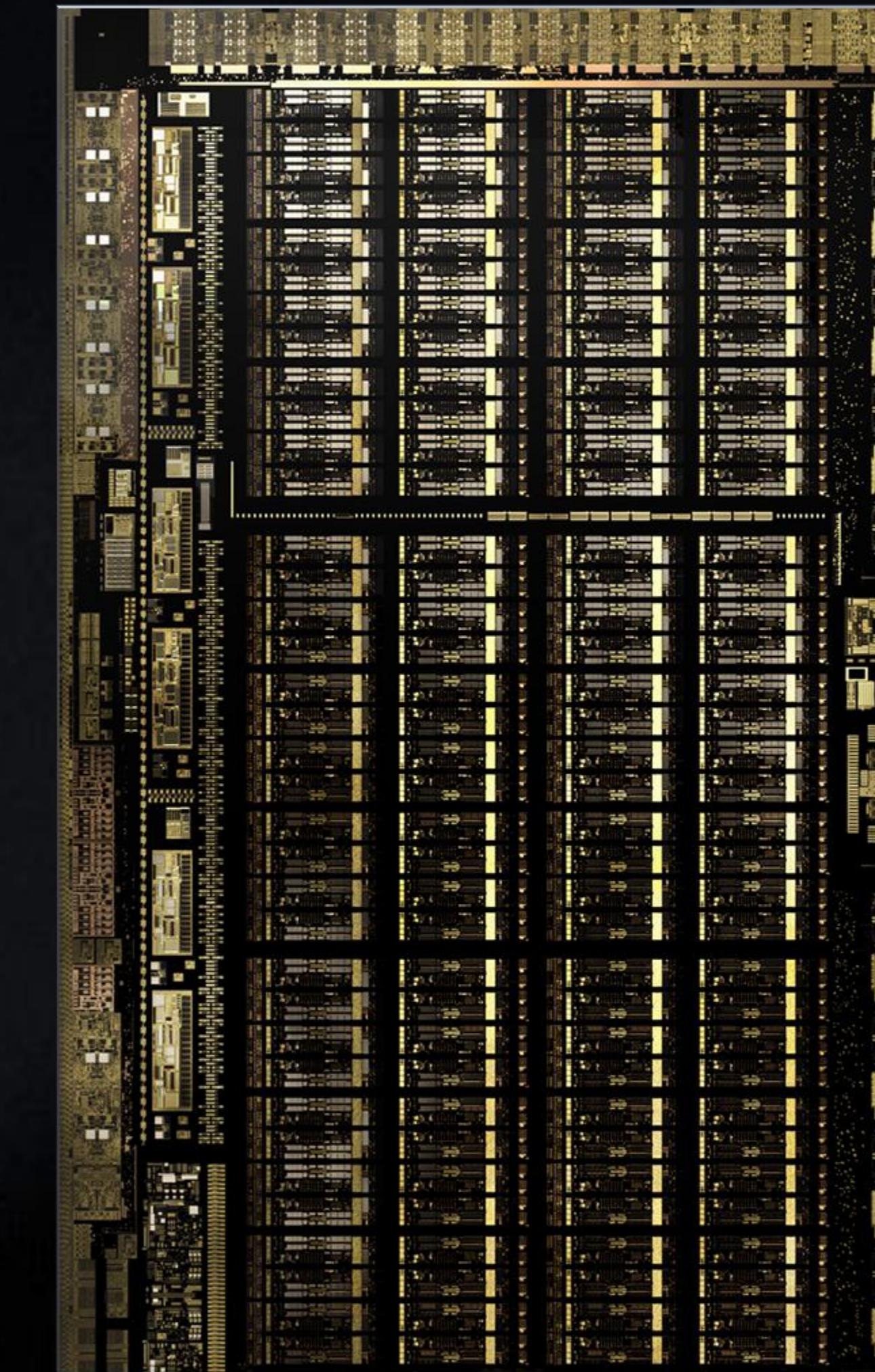
HUGE LEAP



GRAPHICS REINVENTED



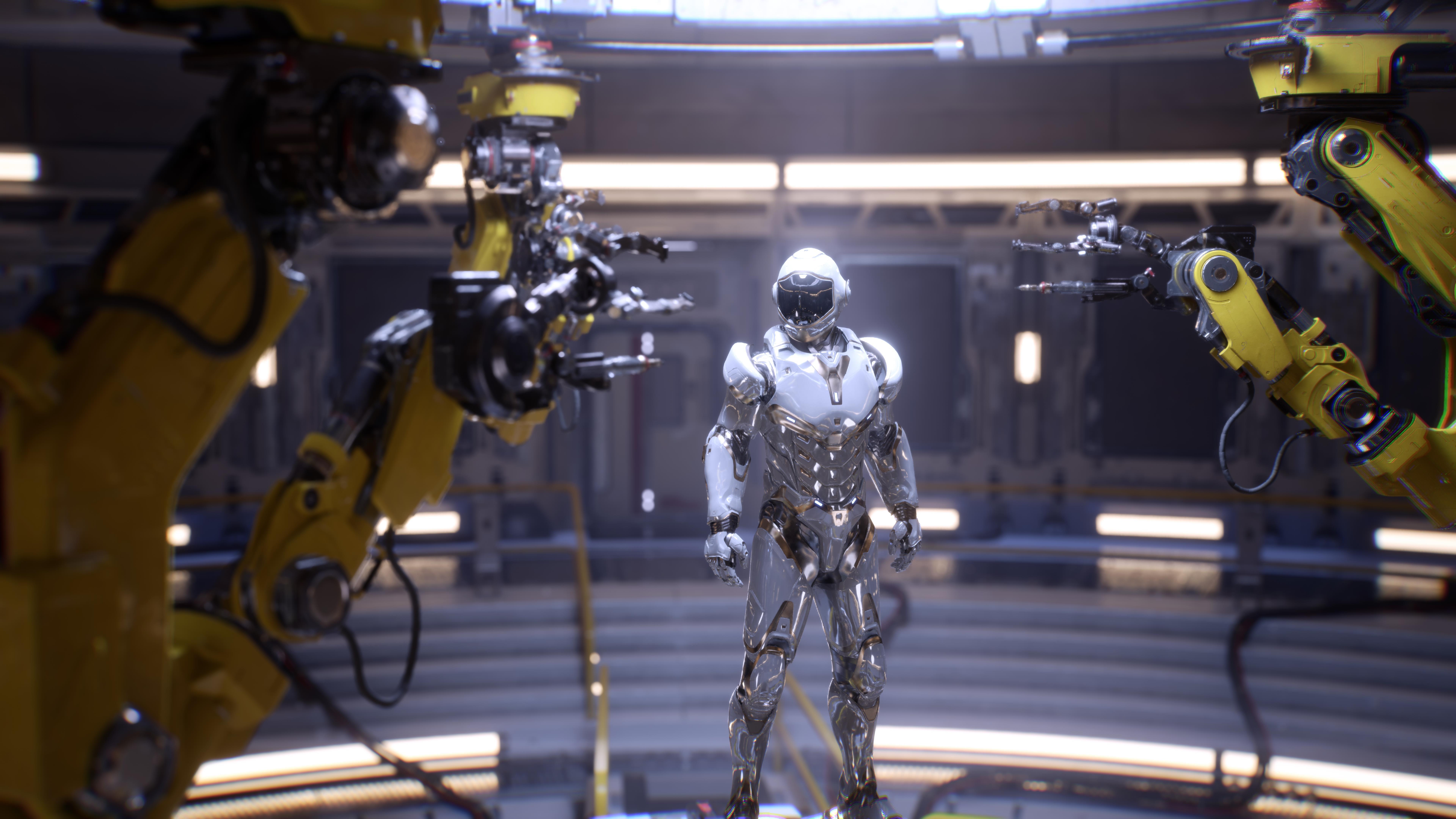
NVIDIA RTX
REAL-TIME RAY TRACING
HYBRID GRAPHICS
RASTERIZATION, RAY TRACING, COMPUTE, AND AI



TURING
78T RTX-OPS



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