“NVIDIA REINVENTS ITSELF EVERY SINGLE YEAR. WE ARE GOING TO CALL NVIDIA ‘THE GOAT,’ THAT IS, THE GREATEST OF ALL TIME.”

MAD MONEY

NVIDIA pioneered accelerated computing to tackle challenges ordinary computers cannot. We make computers for the da Vincis and Einsteins of our time so that they can see and create the future.
Accelerated computing requires more than just powerful chips. We achieve incredible speedups through full-stack invention, from the chips and systems to the algorithms and apps they run.
"NVIDIA NOW ENJOYS A ROBUST AND SELF-SUSTAINING ECOSYSTEM OF SOFTWARE, UNIVERSITIES, STARTUPS, AND PARTNERS”

FORBES

Scientists, researchers, developers, and creators are using NVIDIA to do amazing things. More than 2.5 million developers and 8,500 startups create thousands of applications for accelerated computing. We’ve shipped more than a billion CUDA®-based GPUs.
We invented the programmable shading GPUs 20 years ago, defining modern real-time computer graphics.

With NVIDIA RTX™, we have reinvented computer graphics, again. This new rendering approach fuses rasterization and programmable shading with ray tracing and AI to make PC games look much more beautiful and realistic—almost cinematic.
RTX has come to the world’s best-selling video game: *Minecraft*. Before RTX, game developers painstakingly pre-rendered lighting and shadow effects to make their worlds more realistic. But in user-created virtual worlds like *Minecraft*, only real-time ray tracing can accomplish these beautiful effects.
WITH ITS SERIES OF RTX GRAPHICS CARDS, NVIDIA IS WOWING THE GAMING WORLD

NVIDIA Ampere architecture-powered devices deliver stunning ray-traced graphics with industry-best performance. RTX is a home run with developers—supported by more than 150 top games and creative apps.
Billions of gamers don’t have GeForce® PCs. With our cloud gaming service GeForce NOW™, players can experience the power of a GeForce PC in the cloud, using nearly any device they own. The service hosts 11 million members and is available in 70 countries.
“OMNIVERSE ALLOWS THE ENTIRE PRODUCTION PROCESS TO BE SIMULATED WITH PHOTOREALISTIC DETAILS, AND WITH PHYSICAL PROPERTIES”

NVIDIA Omniverse™ is a platform for simulating and connecting to virtual worlds. In the world of Omniverse, digital content designers can meet virtually to develop complex 3D content in real time. Omniverse obeys the laws of physics. It can simulate particles, fluids, materials, springs, and cables—making it a perfect for training robots, designing products, or creating digital twins of buildings, factories, and even cities.
“In the future, factories themselves will be robots. BMW is using Omniverse to design and create its own factory of the future. Built in digital and simulated from beginning to end, the factory is a digital twin to the one BMW will build.”
NVIDIA IS POWERING THE NEXT ERA OF COMPUTING

In 2006, the creation of our CUDA programming model and data center GPU platform brought parallel processing to general-purpose computing. A powerful new approach to high performance computing was born.

Today, the universe of supercomputing has expanded rapidly to incorporate AI, advanced data analytics, and cloud computing. The era of the CPU-centered monolithic supercomputer is coming to a close. The next era has begun.
With 400 petaflops of AI performance, the Cambridge-1 supercomputer gives healthcare researchers in the U.K. a powerful new tool to take on medicine’s toughest problems. Like NVIDIA’s Selene, the world’s 6th most powerful computer, Cambridge-1 is based on the first turnkey AI supercomputing infrastructure: NVIDIA DGX™ SuperPOD.
HIGH PERFORMANCE COMPUTING WORKLOADS GET TO PIGGYBACK ON ALL OF THIS INNOVATION

THE NEXT PLATFORM

NVIDIA accelerates more than 700 applications today, including the top 15 in scientific computing. By addressing the entire computing stack, we can drive continuous speed improvements on these applications even without releasing new GPUs. We’ve accelerated core HPC applications—used to discover new drugs, explore the cosmos, and predict the weather—by 13X in just five years.
NVIDIA Clara™ Discovery is our suite of acceleration libraries created for computational drug discovery—from imaging, to quantum chemistry, to gene variant-calling, to using Natural Language Processing to understand genetics, to using AI to generate new drug compounds.

Welcome to the digital biology revolution.
NVIDIA IS REARCHITECTING THE DATA CENTER FOR AI

We used to think of a CPU server as the basic unit of computing. But to meet the demands of today’s machine learning and AI workloads, we must optimize the entire data center, from end to end.

The new unit of computing is the data center itself.
“NVIDIA IS NOT JUST A GRAPHICS CHIP COMPANY ANYMORE”

MOTLEY FOOL

Next-generation data centers are an orchestration of three pillars: the GPU for accelerated computing, the CPU for general-purpose computing, and the DPU, which processes and moves data in the data center. The introduction of the NVIDIA Grace™ CPU and the NVIDIA BlueField® DPU make NVIDIA a three-chip company, aimed at rearchitecting the data center for AI.
“NVIDIA CONTINUES TO EXPAND ITS LINE OF DGX APPLIANCES AND CLUSTERS FOR AI COMPUTING”

CRN

At the beginning of the big bang of modern AI, we recognized the need to create a new kind of computer for a new way of developing software. This computer would need new chips, new system architecture, new ways to network, new software, and new methodologies and tools. It all comes together as DGX—a computer for AI, supercharged by the NVIDIA A100 GPU.
NVIDIA IS BRINGING AI TO INDUSTRY

AI began in research labs and was then adopted by cloud computing providers. Now we stand at the cusp of the next wave of AI adoption: AI automation at enterprises.

The next wave of AI is at the edge, and it will revolutionize the world’s largest industries.
Companies are integrating 5G, AI, and autonomous machines to create smart services. The opportunity to automate is endless: retail checkout, autonomous forklifts and tractors, pick-and-place robots, and intelligent hospital rooms. Until now, without deep learning AI, no computer software was able to handle the diverse and seemingly infinite conditions in the real world.
SPEED UP AI DEVELOPMENT BY OVER 10X WITH NVIDIA PRE-TRAINED MODELS

SMART INDUSTRY

NVIDIA has invested billions in developing AI, but it goes well beyond systems and apps. We’ve packaged up pre-trained AI models that developers can easily integrate with their own apps. They’re production quality, trained by experts, and will continue to improve over time.

---

**Model Overview**

This model identifies and tracks objects in a video or image. It can detect objects across a wide range of scales, making it suitable for various applications, including security surveillance, traffic monitoring, and autonomous vehicles. The model is designed to be lightweight and efficient, with minimal computational requirements.

**Model Architecture**

The model is based on Convolutional Neural Networks (CNNs), which are trained on a large dataset of images containing various objects. The CNNs are followed by a fully connected layer that outputs a probability distribution over all classes and an confidence score for each prediction.

**Model Usage**

The model can be used for a variety of applications, including:

- **Object Detection**: Identifying and localizing objects in images or videos.
- **Person Detection**: Identifying and localizing people in images or videos.
- **Vehicle Detection**: Identifying and localizing vehicles in images or videos.

**Model Evaluation**

The model has been evaluated on the COCO dataset, achieving a mean Average Precision (mAP) of 45.8 on the COCO val set and a mAP of 57.4 on the COCO test set.

**Model License**

The model is licensed under the MIT License, allowing for commercial and non-commercial use, including the right to distribute and modify the model.

---

**How to use this model**

1. **Preprocessing**: Transform the input images according to the expected input format. This may include resizing, cropping, or converting to grayscale.
2. **Model Loading**: Load the pre-trained model into your application. Ensure that the model is compatible with the input format and that it is configured correctly.
3. **Object Detection**: Feed the pre-processed images into the model. The model will output a list of detected objects along with their bounding boxes and class predictions.
4. **Post-processing**: Process the output to extract relevant information, such as object dimensions, locations, or other metadata.

---

**Input**

- **Image**: A color image in the format expected by the model. Images can be of different sizes, but they must be compatible with the model's input format.

**Output**

- **Detected Objects**: A list of detected objects, each containing information such as bounding box coordinates, class predictions, and confidence scores.
- **Additional Metadata**: Depending on the application, additional metadata may be included, such as object dimensions, location, or other relevant attributes.
NVIDIA Jetson AGX Xavier™ delivers the energy-efficient computational power needed for embedded systems like robots, drones, and smart cities. From the edge to the data center, all of NVIDIA’s AI computers run on the same CUDA-X AI™ software stack.

“NVIDIA JETSON NANO IS RESPONSIBLE FOR THE BIGGEST INDUSTRIAL IOT REVOLUTION THESE DAYS”

UPSWIFT
“MERCEDES-BENZ AND NVIDIA SIGN A DEAL TO MAKE CARS MORE LIKE IPHONES”

BLOOMBERG

Future cars are going to be completely programmable computers. They will be operated by a supercomputer in the data center that learns from road data and trains the AI networks to drive, and the car’s AV computer to perceive and drive—always learning and improving for the life of the fleet. NVIDIA DRIVE™ is our end-to-end platform for automakers to bring these autonomous vehicles to life.
“FROM AUTOMAKERS TO RESEARCH TEAMS AND STARTUPS, ALL DEPEND ON NVIDIA FOR HARDWARE AND SOFTWARE SOLUTIONS FOR SELF-DRIVING VEHICLES”

ZACK’S

NEXT-GEN EV
- NIO
- Li Auto
- XPENG
- R Auto
- IM 智己汽车
- Faraday Future
- VinFast

MAJOR AUTOMAKERS
- Mercedes-Benz
- VOLVO
- Hyundai
- Audi
- Pony.ai

ROBOTAXIS
- Cruise
- Zoox
- DiDi
- TuSimple

TRUCKING
- Navistar
- Volvo
NVIDIA IS A LEARNING MACHINE

NVIDIA is united by a unique culture—the operating system of our company. We dream big, take risks, and learn from our mistakes together. Speed is the key to our success. Craftsmanship is a passion. There are no org charts—the project is the boss.

These beliefs inform everything we do, from designing amazing products to building one of the world’s great companies—a place where people can do their life’s work.
NVIDIA employees are dedicated to building technology that moves humanity forward and supporting the communities in which they work and live.

We’ve been recognized as a top company in social responsibility, and our employees are passionate donors to hundreds of charities around the globe. Employees joined the company in contributing $16M in 2020 to support COVID-19 response.
“Huang has risen to the elite among Silicon Valley’s visionary leaders. Scores of reports show NVIDIA employees love working for him and his addresses are often technical yet accessible. He commands an audience through his passion for the technology his company is creating.

He’s been at the helm of NVIDIA since co-founding the company at age 30 in 1993 and has led NVIDIA from the maker of computer graphics cards to become the premier platform for artificial intelligence and machine learning. This positions NVIDIA at the forefront as the computing industry contemplates a fundamental shift in processing.

NVIDIA saw it coming.”
<table>
<thead>
<tr>
<th>“BEST PLACES TO WORK IN 2021”</th>
<th>“MOST INNOVATIVE COMPANIES”</th>
<th>“WORLD’S BEST PERFORMING CEO”</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLASSDOOR</td>
<td>FAST COMPANY</td>
<td>HARVARD BUSINESS REVIEW</td>
</tr>
<tr>
<td>“WORLD’S BEST CEOs”</td>
<td>“100 BEST COMPANIES TO WORK FOR”</td>
<td>“50 SMARTEST COMPANIES”</td>
</tr>
<tr>
<td>BARRON’S</td>
<td>FORTUNE</td>
<td>MIT TECH REVIEW</td>
</tr>
</tbody>
</table>

Founded in 1993
Jensen Huang, Founder & CEO
20,000 Employees
$16.7B in FY21