Fundamentals of Deep Learning for Computer Vision

This workshop teaches deep learning techniques for a range of computer vision tasks. After an introduction to deep learning, you'll advance to building and deploying deep learning applications for image classification and object detection, modifying your neural networks to improve their accuracy and performance, and implementing the techniques you've learned on a final project. At the end of the workshop, you'll have access to additional resources to create new deep learning applications on your own.

Duration:	8 hours
Price:	$10,000 for groups of up to 20 (price increase for larger groups). During the workshop, each participant will have dedicated access to a fully configured, GPU-accelerated workstation in the cloud.
Assessment type:	Code-based
Certificate:	Upon successful completion of the assessment, participants will receive an NVIDIA DLI certificate to recognize their subject matter competency and support professional career growth.
Prerequisites:	Familiarity with programming fundamentals such as functions and variables
Languages:	English, Japanese, Korean, Chinese
Tools, libraries, and frameworks:	Caffe, DIGITS

Learning Objectives

At the conclusion of the workshop, you'll have an understanding of the fundamentals of deep learning and be able to:

- Implement common deep learning workflows, such as image classification and object detection
- Experiment with data, training parameters, network structure, and other strategies to increase performance and capability of neural networks
- Integrate and deploy neural networks in your own applications to start solving sophisticated real-world problems

Why Deep Learning Institute Hands-On Training?

- Learn to build deep learning and accelerated computing applications for industries such as autonomous vehicles, finance, game development, healthcare, robotics, and more.
- Obtain hands-on experience with the most widely used, industry-standard software, tools, and frameworks.
- Gain real-world expertise through content designed in collaboration with industry leaders such as the Children's Hospital of Los Angeles, Mayo Clinic, and PwC.
- Earn an NVIDIA DLI certificate to demonstrate your subject matter competency and support career growth.
- Access content anywhere, anytime with a fully configured, GPU-accelerated workstation in the cloud.

Workshop Outline

TOPIC	DESCRIPTION
Introduction (15 mins)	> Meet the instructor. > Create an account at **courses.nvidia.com/join**
Unlocking New Capabilities (120 mins)	> Learn the biological inspiration behind deep neural networks (DNNs). > Explore training DNNs with big data. > Train neural networks to perform image classification by harnessing the three main ingredients of deep learning: deep neural networks, big data, and the GPU.
Break (60 mins)	
Unlocking New Capabilities and Measuring and Improving Performance (120 mins)	> Deploy trained neural networks from their training environment into real applications. > Optimize DNN performance. > Incorporate object detection into your DNNs.
Break (15 mins)	
Final Project (120 mins)	> Validate learnings by applying the deep learning application development workflow (load dataset, train, and deploy model) to a new problem. > Learn how to set up your GPU-enabled environment to begin work on your own projects. > Explore additional project ideas and resources to get started with NVIDIA AMI in the cloud, nvidia-docker, and the NVIDIA DIGITS container.
Final Review (15 mins)	> Review key learnings and wrap up questions. > Complete the assessment to earn a certificate. > Take the workshop survey.

This content is also available as a self-paced, online course. Visit **www.nvidia.com/dli** for more information.