

Traditional cybersecurity methods include creating barriers around your infrastructure to protect it from intruders. However, as enterprises continue to digitally transform, they're faced with a proliferation of devices, more sophisticated cybersecurity attacks, and an incredibly vast network of data to protect—which means new cybersecurity methodologies must be explored. An alternative approach is to address cybersecurity as a data science problem: Aim to better understand all the users and activities across your network so that you can identify which transactions are typical and which are potentially nefarious.

The NVIDIA Morpheus AI framework lets cybersecurity developers and practitioners harness the power of GPU computing to implement cybersecurity solutions that perform on a scale never before possible. With Morpheus, cybersecurity developers can create optimized AI pipelines for filtering, processing, and classifying large volumes of real-time data. Bringing a new level of information security to data centers, Morpheus enables dynamic protection, real-time telemetry, and adaptive defenses for detecting and remediating cybersecurity threats.

Learning Objectives

By participating in this workshop, you'll be able to:

- > Build Morpheus pipelines to process and perform AI-based inference on massive amounts of data for cybersecurity use cases in real time
- > Utilize several AI models with a variety of data input types for tasks like sensitive information detection, anomalous behavior profiling, and digital fingerprinting
- > Leverage key components of the Morpheus AI framework, including the Morpheus SDK and command-line interface (CLI), and NVIDIA Triton™ Inference Server

Overview

Duration	8 hours
Price	Contact us for pricing
Prerequisites	> Familiarity with defensive cybersecurity themes > Professional data science and/or data analysis experience > Competency with the Python programming language > Competency with the Linux command line
Tools, libraries, and frameworks	NVIDIA Morpheus, NVIDIA Triton Inference Server, RAPIDS™, CLX
Assessment type	Skills-based coding assessments evaluate students' ability to build end-to-end Morpheus cybersecurity pipelines. Multiple-choice questions test students' understanding of the Morpheus-related concepts presented in the workshop.
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.
Hardware/software requirements	Desktop or laptop computer capable of running the latest version of Chrome or Firefox. Each participant will be provided with dedicated access to a fully configured, GPU-accelerated workstation in the cloud.
Language	English

Workshop Outline

Introduction (15 minutes)	> Meet the instructor. > Create an account at courses.nvidia.com/join
An Overview of the NVIDIA Morpheus AI Framework (30 minutes)	> Understand the need for AI-based cybersecurity. > Learn about the components of the Morpheus framework. > Discover how institutions are building solutions with Morpheus.
Morpheus Pipeline Construction (45 minutes)	> Get an overview of the Morpheus SDK and CLI. > Learn about pipeline types and commands. > Learn about data input/output (IO) and processing.
Inference in Morpheus Pipelines (45 minutes)	> Get an overview of NVIDIA Triton Inference Server. > Understand how models are deployed. > Explore a sensitive-information-detection pipeline.
Break (60 minutes)	
Case Study: AI-Based Machine Log Parsing at Splunk (30 minutes)	> Apply your understanding to a real-world example.
Digital Fingerprinting Pipeline (45 minutes)	> Use the Morpheus autoencoder pipeline. > Discover compromised credentials.
Time Series Analysis (45 minutes)	> Apply time-series analysis within a Morpheus pipeline. > Combine time-series analysis with digital fingerprinting.
Break (30 minutes)	
Case Study: Cybersecurity Flyaway Kit at Booz Allen Hamilton (30 minutes)	> Apply your understanding to a real-world example.
Assessment 1: Test Your Understanding (45 minutes)	> Review the key concepts from the workshop > Assess your conceptual understanding of the topics covered.
Assessment 2: Practical Demonstration (45 minutes)	> Build an end-to-end Morpheus pipeline to identify a cybersecurity breach.
Wrap Up (15 minutes)	> Get resources for further development with Morpheus. > Provide feedback on the workshop.

Why Choose NVIDIA Deep Learning Institute for Hands-On Training?

- > Access workshops from anywhere with just your desktop/laptop and an internet connection. Each participant will have access to a fully configured, GPU-accelerated server in the cloud.
- > Obtain hands-on experience with the most widely used, industry-standard software, tools, and frameworks.
- > Learn to build deep learning and accelerated computing applications for industries, such as healthcare, robotics, manufacturing, accelerated computing, and more.
- > Gain real-world experience 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 your career growth. 🌟

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For questions, contact us at nvdl@nvidia.com

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