Israel | 18 Oct 2017
Session Listing

Updated 31 July

GTC Israel Keynote ***Jensen Huang, Founder & CEO, NVIDIA*** Don't miss this keynote from NVIDIA Founder & CEO, Jensen Huang, as he speaks on the future of computing and highlights the impact of artificial intelligence and deep learning.	10:00 Hall D
DLI Lab: Image Classification with DIGITS ***Gunter Roeth, Certified Instructor, NVIDIA Deep Learning Institute*** Learn how to leverage deep neural networks (DNN) within the deep learning workflow to solve a real-world image classification problem using NVIDIA DIGITS. You will walk through the process of data preparation, model definition, model training and troubleshooting. You will use validation data to test and try different strategies for improving model performance using GPUs. On completion of this lab, you will be able to use DIGITS to train a DNN on your own image classification application.	Time TBA Room TBA **This Lab requires a Conference & Training Pass*
DLI Lab: Modeling Time Series Data with Recurrent Neural Networks in Keras ***Charles Killam, Certified Instructor, NVIDIA Deep Learning Institute*** One important area of current research is the use of deep neural networks to classify or forecast time-series data. Time-series data is produced in large volumes from sensors in a variety of application domains including Internet of Things (IoT), cyber security, data center management and medical patient care. In this lab, you will learn how to create training and testing datasets using electronic health records in HDF5 (hierarchical data format version five) and prepare datasets for use with recurrent neural networks (RNNs), which allows modeling of very complex data sequences. You will then construct a long-short term memory model (LSTM), a specific RNN architecture, using the Keras library running on top of Theano to evaluate model performance against baseline data.	Time TBA Room TBA **This Lab requires a Conference & Training Pass*
DLI Lab: Neural Network Deployment with DIGITS and TensorRT ***Gunter Roeth, Certified Instructor, NVIDIA Deep Learning Institute*** This lab will show three approaches for deployment. The first approach is to directly use inference functionality within a deep learning framework, in this case NVIDIA DIGITS and Caffe. The second approach is to integrate inference within a custom application by using a deep learning framework API, again using Caffe, but this time through its Python API. The final approach is to use the NVIDIA TensorRT™, which will automatically create an optimized inference run-time from a trained Caffe model and network description file. In this lab, you will learn about the role of batch size in inference performance, as well as various optimizations that can be made in the inference process. You will also explore inference for a variety of different DNN architectures trained in other DLI labs.	Time TBA Room TBA **This Lab requires a Conference & Training Pass*

DLI Lab: Object Detection with DIGITS ***Gunter Roeth, Certified Instructor, NVIDIA Deep Learning Institute*** This lab explores three approaches to identify a specific feature within an image. Each approach is measured in relation to three metrics: model training time, model accuracy and speed of detection during deployment. On completion of this lab, you will understand the merits of each approach and learn how to detect objects using neural networks trained on NVIDIA DIGITS using real-world datasets.	Time TBA Room TBA **This Lab requires a Conference & Training Pass*
A Social Network of Intelligent Machines for Guest Entry and Security ***Lisa Dolev, CEO, Qylur Intelligent Systems*** How we can enable automated AI/ Deep learning based machines to evolve their specialties through colonies of "social networks of intelligent machines" (SNIM)? We will give an example of Qylur's QyNetTM machines cloud concept and how we utilize the power of SNIMs, GPU enabled deep learning and execution at edge systems, to enable a revolution in our guest entry operations and physical security for public venues. From mega events to parks and museums. We will also dream a bit further to how other industrial intelligent machines can benefit from the QyNet SNIM, and also touch on our responsibilities as humans as we enable this disruptive and beneficial revolution to take place.	Time TBA Room TBA
Deep Learning: An Artificial Brain That Detects Any Type of Cyber Threat ***Eli David, CTO, Deep Instinct*** Join our presentation on the first application of deep learning to cybersecurity. Deep learning is inspired by the brain's ability to learn: once a brain learns to identify an object, its identification becomes second nature. Similarly, as a deep learning-based artificial brain learns to detect any type of cyber threat, its prediction capabilities become instinctive. As a result, the most evasive and unknown cyber-attacks are immediately detected and prevented. We will cover the evolution of artificial intelligence, from old rule-based systems to conventional machine learning models until current state-of-the-art deep learning models.	Time TBA Room TBA
Teaching a Car to Drive ***Larry Jackel, Deep Learning and Robotics Specialist, NVIDIA*** NVIDIA's Autonomous Vehicle Research Lab will present breakthroughs in developing and testing deep neural networks to improve the safety and robustness of self-driving cars. One approach involves teaching a deep convolutional neural network (DNN) to drive by observing human drivers and emulating their behavior for lane keeping, lane changes, and turns. In addition, the session will showcase tools used to visualize the data processing of the neural network during training and testing, as well as the use of simulation to enhance the training process. This technology is part of an end-to-end platform	Time TBA Room TBA

that will ultimately enable self-driving cars up to Level 5. Finally, the session will cover how DNNs can learn autonomous driving related tasks that were previously thought solvable only by manual decomposition of the problem, and how learned execution of maneuvers can be performed without relying solely on localization and HD maps.	
Mixed Precision Training of Deep NN with Volta ***Boris Ginsburg, Deep Learning Engineer, NVIDIA*** We'll describe training of very deep networks with mixed-precision float (("float16") using Volta Tensor Core. Float16 has two major potential benefits: high training speed and reduced memory footprint. But float16 has smaller numerical range than regular single precision float, which can result in overflow or underflow ("vanishing gradient") during training. We'll describe simple rescaling mechanism which solves these potential issues. With this rescaling algorithm, we successfully used mixed precision training for such networks as Alexnet, GoogLeNet, Inception_v3, and Resnets without any loss in accuracy. Other contributors to this work are S. Nikolaev, M. Houston, A. Kiswani, A. Gholaminejad, S. Migacz, H. Wu, A. Fit-Florea, and U. Kapasi.	Time TBA Room TBA
Leveraging Deep Learning to Transform Video Data into Actionable Intelligence ***Tom Edlund, CTO, Briefcam*** Video is increasingly becoming a key sensor for maintaining security, business performance and efficient operations. This session will discuss the technology and application of BriefCam's video analytics solutions. Topics will include how GPUs and deep learning generates rich metadata from video and how it solves a diverse range of problems and applications.	Time TBA Room TBA
Utilizing AI & GPUs to Build Cloud-based Real-Time Video Event Detection Solutions ***Zvika Ashani, CTO & Co-Founder, Agent Video Intelligence (Agent Vi)*** In this session, you will learn about the challenges of creating a cloud-based video analytics service that can easily scale to process hundreds of thousands of cameras in real-time, by utilizing state-of-the-art AI running on GPUs. Most video analytics services in the cloud work in a "batch" format (offline), whereby a video clip is uploaded to the service, analyzed, and then results are delivered to the user. Performing video analytics in real-time on a large number of continuous video streams, and with low latency, poses a significant engineering challenge. Learn how Agent Video Intelligence has overcome these challenges to create innoVi video analytics service.	Time TBA Room TBA

DriveWorks: NVIDIA's Autonomous Driving SDK ***Gaurav Agarwal, Senior Product Manager, NVIDIA*** NVIDIA DriveWorks is a complete software development kit for autonomous driving, designed for processing sensor data for all stages of the self-driving pipeline, including: perception, mapping, localization, and path planning. This session will provide a functional overview of DriveWorks, covering sensor abstraction layer, algorithm modules, DNNs, applications, as well as the UI and tools for sensor setup and management. The modular nature of DriveWorks will be shown through examples of algorithms running on GPUs utilizing CUDA/cuDNN, TensorRT, and VPI.	Time TBA Room TBA
Using DRIVE PX 2 to Drive a Vehicle Autonomously ***Shri Sundaram, Senior Product Manager, NVIDIA*** This session will provide first hand details into using NVIDIA DRIVE PX 2 in test vehicle, focusing on data acquisition, data annotation, neural network training, and in-vehicle inference. Specific topics include: selecting the right suite of sensors for perception, how to best to log and annotate data, insights for training a neural network, and how to use a neural network for inferencing to create an occupancy grid and ultimately drive the car.	Time TBA Room TBA
Scaling Machine Learning – Enabling enhanced GPU Performance for AI (Presented by Mellanox) ***Gil Bloch, Principal Architect, Mellanox Technologies*** ***Gilad Shainer, VP of Marketing, Mellanox Technologies*** Come join us, and learn how to build a data-centric GPU cluster for artificial intelligence. Mellanox is a leader in high-performance, scalable, low-latency network interconnects for both InfiniBand and Ethernet. We will briefly present the state of the art techniques for distributed machine learning, and what special requirements they impose on the system, followed by an overview of interconnect technologies used to scale and accelerate distributed machine learning including RDMA, NVIDIA's GPUDirect technology and in-network computing use to accelerates large scale deployments in HPC and artificial intelligence.	Time TBA Room TBA
Cybersecurity for Self-Driving Cars: Staying Connected and Protected ***Monique Lance, Director of Marketing, Argus Cyber Security*** With rapid advances in connectivity, advanced driving systems and the accelerated trend towards self-driving cars, the automotive ecosystem is changing. These trends promise great benefits for motorists and commercial fleets. However, they also pose a significant increase in cyber risk and threaten consumer trust in vehicles. Today, more than ever cyber security is becoming integral to road safety and almost all major brands have been attacked. Unlike	Time TBA Room TBA

safety features, cyber security involves both prevention mechanisms and ongoing vigilance throughout the vehicle's lifetime-from the concept stage till the vehicle's decommission. For automakers, this requires adopting a holistic cyber security approach and incorporating procedures and requirements into their corporate strategy. In this presentation you will hear about measures that will help the automotive industry prevent, understand and respond to cyber threats so as to maintain and promote consumer trust in modern transportation.	
Medical Image AI: Cutting-Edge Solutions to Overcome the Domain's Unique Challenges ***Elad Walach, CEO, Aidoc Medical Ltd*** Our session will provide an overview of the medical image AI domain, including: Technological challenges unique to the medical image domain such as deep learning based on 3D images, high variability images, and the need to reach high accuracy results necessary for healthcare purposes. Leveraging high performance computing to provide solutions to the various challenges unique to medical image AI. We will share our latest insights relating to both the optimization of deep learning computing infrastructure and cutting edge types of deep learning architectures that we have tailor-made and implemented into our domain.	Time TBA Room TBA

More labs and sessions to be announced weekly.

Check back for additional sessions and final times and room assignments.