

MONDAY,  
MAY 21

TensorFlow class requires  
separate registration

7:30 – 9:00 am  
REGISTRATION  
MAIN LOBBY

8:00 am–9:00 am  
COFFEE & PASTRIES  
GREAT AMERICA BALLROOM 1 – 2

9:00 am – 5:00 pm

Deep Learning for  
Computer Vision  
with TensorFlow

GREAT AMERICA BALLROOM 1 – 2

The first day of the Embedded  
Vision Summit is dedicated to  
our new training class: Deep  
Learning for Computer Vision  
with TensorFlow. The workshop  
will provide you with a hands  
– on overview of deep learning  
applications of TensorFlow.

This one – day workshop covers:

- Introduction to TensorFlow
- Neural Networks in TensorFlow
- Object Recognition in TensorFlow
- Training Data and Issues
- Open Source CNN Models

If you missed this opportunity  
at the Summit to take charge  
of your professional development,  
visit **www.tensorflow.**  
**embedded-vision.com** to  
find out about upcoming  
classes.

FEE: \$895

Organized by 

TUESDAY, MAY 22

7:30 am – 6:00 pm  
REGISTRATION

8:00 – 9:00 am  
COFFEE & PASTRIES

9:00 – 10:20 am  
WELCOME & KEYNOTE MISSION CITY BALLROOM B2 – 5

Think Like an Amateur, Do As an Expert:  
Lessons from a Career in Computer Vision

Dr. Takeo Kanade  
U.A. and Helen Whitaker Professor, Carnegie Mellon University

10:40 am – 12:30 pm

TECHNICAL INSIGHTS I  
MISSION CITY BALLROOM B2 – 5

TECHNICAL INSIGHTS II  
ROOM 203 – 4

FUNDAMENTALS  
MISSION CITY BALLROOM M1 – 3

BUSINESS INSIGHTS  
THEATER

ENABLING TECHNOLOGIES I  
HALL A2

ENABLING TECHNOLOGIES II  
HALL A3

12:30 pm – 1:30 pm  
LUNCH

1:30 pm – 6:00 pm

TECHNICAL INSIGHTS I  
MISSION CITY BALLROOM B2 – 5

TECHNICAL INSIGHTS II  
ROOM 203 – 4

FUNDAMENTALS  
MISSION CITY BALLROOM M1 – 3

BUSINESS INSIGHTS  
THEATER

ENABLING TECHNOLOGIES I  
HALL A2

ENABLING TECHNOLOGIES II  
HALL A3

5:00 pm – 6:00 pm  
Vision Entrepreneur's Panel  
THEATER

6:15 pm – 6:45 pm  
Vision Product of the Year Awards  
HALL A2

12:00 pm – 8:00 pm

Vision  
Technology  
Showcase

HALL A1 & HALL B

6:00 pm – 8:00 pm  
Vision  
Technology  
Showcase  
Reception

HALL A1 & HALL B  
Join us for food,  
drink & demos!

WEDNESDAY, MAY 23

7:30 am – 6:00 pm  
REGISTRATION

8:00 – 9:00 am  
COFFEE & PASTRIES

9:00 – 10:20 am  
WELCOME & KEYNOTE MISSION CITY BALLROOM B2 – 5

From Mobility to Medicine: Vision Enables  
the Next Generation of Innovation

Dean Kamen  
Founder, DEKA Research and Development

10:40 am – 12:30 pm

TECHNICAL INSIGHTS I  
MISSION CITY BALLROOM B2 – 5

TECHNICAL INSIGHTS II  
ROOM 203 – 4

FUNDAMENTALS  
MISSION CITY BALLROOM M1 – 3

BUSINESS INSIGHTS  
THEATER

ENABLING TECHNOLOGIES I  
HALL A2

ENABLING TECHNOLOGIES II  
HALL A3

12:30 pm – 1:30 pm  
LUNCH

1:30 pm – 6:00 pm

TECHNICAL INSIGHTS I  
MISSION CITY BALLROOM B2 – 5

TECHNICAL INSIGHTS II  
ROOM 203 – 4

FUNDAMENTALS  
MISSION CITY BALLROOM M1 – 3

BUSINESS INSIGHTS  
THEATER

ENABLING TECHNOLOGIES I  
HALL A2

ENABLING TECHNOLOGIES II  
HALL A3

5:00 pm – 6:00 pm  
Vision Tank Competition  
THEATER

10:30 am – 6:00 pm

Vision  
Technology  
Showcase

HALL A1 & HALL B

THURSDAY,  
MAY 24

Workshops require separate registration. Badge  
pickup is available at times and locations below.

8:00 – 9:00 am  
COFFEE & PASTRIES  
200 ROOMS FOYER

9:00 am – 5:00 pm


Optimized Inference  
at the Edge with Intel®

ROOM 209—LUNCH IN ROOM 210

REGISTRATION 8:00 am – 2:00 pm  
200 ROOMS FOYER

This hands-on workshop will take you  
through a computer vision workflow  
using the latest Intel® technologies and  
comprehensive toolkits including support  
for deep learning algorithms that help  
accelerate smart video applications.

FEE: \$25

Organized by 

9:00 am – 5:30 pm

Khronos Standards  
for Neural Networks and  
Embedded Vision

ROOM 203—LUNCH IN ROOM 204

REGISTRATION 8:00 am – 2:00 pm  
200 ROOMS FOYER

This workshop covers Khronos standards  
related to neural networks and computer  
vision. The primary focus of this workshop  
is about the new standard NNEF (Neural  
Network Exchange Format) based neural  
network inference workflows.

FEE: \$50

Organized by 

8:45 am – 5:30 pm

Artificial Intelligence, From  
Concept to Implementation

BALLROOM H — LUNCH IN BALLROOM H FOYER

REGISTRATION 8:00 am – 2:00 pm  
BALLROOM H FOYER

In this workshop, you will learn how the  
latest advances in deep learning, artificial  
intelligence and embedded vision are being  
implemented in designs from automotive  
ADAS and IoT to industrial design.

FEE: \$25

Organized by 

TECHNICAL INSIGHTS I MISSION CITY BALLROOM B2 – B5	TECHNICAL INSIGHTS II ROOM 203/204	FUNDAMENTALS MISSION CITY BALLROOM M1 – M3	BUSINESS INSIGHTS THEATER	ENABLING TECHNOLOGIES I HALL A2	ENABLING TECHNOLOGIES II HALL A3
<div>10:40 – 11:10 am Portability &amp; Performance in Embedded Neural Networks: Can We Have Both? Cormac Brick, Movidius, an Intel company</div> <div>11:20 am – 12:20 pm Words, Pictures and Common Sense: Visual Question Answering Devi Parikh, Georgia Tech &amp; Facebook</div>	<div>10:40 – 11:10 am How Simulation Accelerates Development of Self-Driving Technology László Kishonti, Almotive</div> <div>11:20 – 11:50 am Computer Vision HW Acceleration for Driver Assistance Markus Tremmel, Bosch</div> <div>12:00 – 12:30 pm Understanding Real-world Imaging Challenges for ADAS and Autonomous Vision Systems Felix Heide, Algolux</div>	<div>10:40 – 11:10 am Solving Vision Tasks Using Deep Learning: An Introduction Pete Warden, Google</div> <div>11:20 am – 12:20 pm From Feature Engineering to Network Engineering Auro Tripathy, AMD (Tripathy)</div>	<div>10:40 – 11:10 am EXECUTIVE PERSPECTIVE IIoT—The Era of Intelligent Devices Ren Wu, Novumind</div> <div>11:20 – 11:50 am What's Hot? The M&amp;A and Funding Landscape for Machine Vision Companies Rudy Burger, Woodside Capital</div> <div>12:00 – 12:30 pm Ubiquitous \$90B AR to Dominate Focused \$15B VR by 2022, Becoming a Major Computer Vision Market Tim Merel, Digi-Capital</div>		
12:30 – 1:30 pm LUNCH					
<div>1:30 – 2:30 pm Even Faster CNNs: Exploring the New Class of Winograd Algorithms Gian Marco Iodice, ARM</div> <div>2:50 – 3:20 pm Developing Computer Vision Algorithms for Networked Cameras Dukhwan Kim, Intel</div> <div>3:30 – 4:00 pm Building a Typical Visual SLAM Pipeline YoungWoo Seo, Hyperloop – One</div> <div>4:10 – 4:40 pm Programming Techniques for Implementing Inference Software Efficiently Andrew Richards, Codeplay Software</div> <div>4:50 – 5:20 pm The OpenVX Computer Vision and Neural Network Inference Library Standard for Portable, Efficient Code Radhakrishna Giduthuri, AMD</div> <div>5:30 – 6:00 pm APIs for Accelerating Vision and Inferencing: Options and Trade-offs Neil Trevett, Khronos Group</div>	<div>1:30 – 2:00 pm The Roomba 980: Computer Vision Meets Consumer Robotics Mario Munich, iRobot</div> <div>2:10 – 2:40 pm Deep Understanding of Shopper Behaviors and Interactions Using Computer Vision Emanuele Frontoni, Università Politecnica delle Marche</div> <div>2:50 – 3:50 pm Getting More from Your Datasets: Data Augmentation, Annotation and Generative Techniques Peter Corcoran, FotoNation (an Xperi Company) &amp; National University of Ireland, Galway</div> <div>4:10 – 4:40 pm Recognizing Novel Objects in Novel Surroundings with Single-shot Detectors Alex Berg, UNC, Chapel Hill</div> <div>4:50 – 5:20 pm Deploying CNN-based Vision Solutions on a \$3 Microcontroller Greg Lytle, Au-Zone Technologies</div>	<div>1:30 – 2:30 pm Visual-Inertial Tracking for AR and VR Timo Ahonen, Meta</div> <div>2:50 – 3:50 pm Understanding and Implementing Face Landmark Detection and Tracking Jayachandra Dakala, PathPartner Technology Pvt Ltd</div> <div>4:10 – 4:40 pm Building a Practical Face Recognition System Using Cloud APIs Chris Adzima, Washington County Sheriff's Office</div> <div>4:50 – 5:20 pm Bad Data, Bad Network, or: How to Create the Right Dataset for Your Application Mike Schmit, AMD</div> <div>5:30 – 6:00 pm Introduction to Creating a Vision Solution in the Cloud Nishita Sant, GumGum</div>	<div>1:30 – 2:00 pm EXECUTIVE PERSPECTIVE Balancing Safety, Convenience and Privacy in the Era of Ubiquitous Cameras Charlotte Dryden, Intel</div> <div>2:10 – 2:40 pm Data-driven Business Models Enabled by 3D Vision Technology Christopher Scheubel, FRAMOS</div> <div>2:50 – 3:20 pm Reduce Risk in Computer Vision-based Product Design By Focusing on the User Experience Paul Duckworth, Twistthink</div> <div>3:30 – 4:00 pm EXECUTIVE PERSPECTIVE Leveraging Edge and Cloud for Visual Intelligence Solutions Salil Raje, Xilinx</div> <div>4:10 – 4:40 pm Leveraging Cloud Computer Vision for a Real-time Consumer Product Pavan Kumar, Cocoon Cam</div> <div>5:00 – 6:00 pm Vision Entrepreneurs' Panel Moderator: Nik Gagvani, President, CheckVideo Radha Basu, CEO, iMerit Gary Bradski, CTO, Arraiy &amp; CEO, OpenCV.org László Kishonti, CEO, Almotive</div>	<div>1:30 – 2:00 pm Machine Learning Inference in Under 5 mW with a Binarized Neural Network on an FPGA Abdullah Raouf, Lattice Semiconductor</div> <div>2:10 – 2:40 pm Programmable CNN Acceleration in Under 1 Watt Gordon Hands, Lattice Semiconductor</div> <div>2:50 – 3:20 pm High-End Multi-Camera Technology, Applications and Examples Max Larin, Ximea</div> <div>3:30 – 4:00 pm Mythic's Analog Deep Learning Accelerator Chip: High Performance Inference Fred Soo, Mythic</div> <div>4:10 – 4:40 pm Rapid Development of Efficient Vision Applications Using the Halide Language and CEVA Processors Yair Siegel, CEVA and Gary Gitelson, mPerpetuo, Inc.</div>	<div>1:30 – 2:00 pm A New Generation of Camera Modules: A Novel Approach and Its Benefits for Embedded Systems Paul Maria Zalewski, Allied Vision</div> <div>2:10 – 2:40 pm Enabling Cross-platform Deep Learning Applications with the Intel CV SDK Yury Gorbachev, Intel</div> <div>2:50 – 3:20 pm Achieving High-Performance Vision Processing for Embedded Applications with Qualcomm SoC Platforms Shardul Brahmabhatt, Qualcomm</div> <div>3:30 – 4:00 pm Infusing Visual Understanding in Cloud and Edge Solutions Using State-of-the-Art Microsoft Algorithms Anirudh Koul and Jin Yamamoto, Microsoft</div>

TECHNICAL INSIGHTS I MISSION CITY BALLROOM B2 – B5	TECHNICAL INSIGHTS II ROOM 203/204	FUNDAMENTALS MISSION CITY BALLROOM M1 – M3	BUSINESS INSIGHTS THEATER	ENABLING TECHNOLOGIES I HALL A2	ENABLING TECHNOLOGIES II HALL A3
<div>10:40 – 11:10 am Deep Quantization for Energy-efficient Inference at the Edge Hoon Choi, Lattice Semiconductor</div> <div>11:20 am – 12:20 pm What is Neuromorphic Event-based Computer Vision? Sensors, Theory and Applications R.B. Benosman, University of Pittsburgh Medical Center, Carnegie Mellon University &amp; Sorbonne Universit��s</div>	<div>10:40 – 11:10 am The Perspective Transform in Embedded Vision Aditya Joshi and Shrinivas Gadkari, Cadence</div> <div>11:20 – 11:50 am Harnessing the Edge and the Cloud Together for Visual AI S��bastien Taylor, Au-Zone Technologies</div> <div>12:00 – 12:30 pm New Deep Learning Techniques for Embedded Systems Tom Michiels, Synopsys</div>	<div>10:40 – 11:10 am Understanding Automotive Radar: Present and Future Roger Keen, NXP</div> <div>11:20 am – 12:20 pm Depth Cameras: A State-of-the-Art Overview Carlo Dal Mutto, Aquifi</div>	<div>10:40 – 11:10 am EXECUTIVE PERSPECTIVE Embedded AI for Smart Cities and Retail in China Kai Yu, Horizon Robotics</div> <div>11:20 – 11:50 am Using Vision to Transform Retail Sumit Gupta, IBM</div> <div>12:00 – 12:30 pm Computer Vision for Industrial Inspection: The Evolution from PCs to Embedded Solutions Thomas D��ubler, NET New Electronic Technology GmbH</div>	<div>10:40 – 11:10 am Designing Smarter, Safer Cars with Embedded Vision Fergus Casey, Synopsys</div> <div>11:20 – 11:50 am Neural Network Compiler: Enabling Rapid Deployment of DNNs on Low-cost, Low-power Processors Megha Daga, Cadence</div> <div>12:00 – 12:30 pm New Memory-centric Architecture Needed for AI Sylvain Dubois, Crossbar, Inc.</div>	<div>10:40 – 11:10 am Deep Learning on Arm Cortex-M Microcontrollers Vikas Chandra, Arm</div> <div>11:20 – 11:50 am Rethinking Deep Learning: Neural Compute Stick Ashish Pai, Intel</div> <div>12:00 – 12:30 pm Project Trillium: A New Suite of Machine Learning IP from Arm Steve Steele, Arm</div>
12:30 – 1:30 pm LUNCH			12:30 – 1:30 pm LUNCH		
<div>1:30 – 2:00 pm Real-time Calibration for Stereo Cameras Using Machine Learning Sheldon Fernandes, Lucid VR</div> <div>2:10 – 2:40 pm Building Efficient CNN Models for Mobile and Embedded Applications Peter Vajda, Facebook</div> <div>2:50 – 3:20 pm Utilizing Neural Networks to Validate Display Content in Mission Critical Systems Shang-Hung Lin, Verisilicon</div> <div>3:30 – 4:00 pm Role of the Cloud in Autonomous Vehicle Vision Processing: A View from the Edge Ali Osman Ors, NXP</div> <div>4:10 – 4:40 pm Generative Sensing: Reliable Recognition from Unreliable Sensor Data Lina Karam, Arizona State University</div> <div>4:50 – 5:20 pm Creating a Computationally-efficient Embedded CNN Face Recognizer Praveen.G.B., PathPartner Technology Pvt Ltd</div> <div>5:30 – 6:00 pm Hybrid Semi-parallel Deep Neural Networks (SPDNN)—Example Methodologies &amp; Use Cases Peter Corcoran, FotoNation (an Xperi Company) &amp; National University of Ireland Galway</div>	<div>1:30 – 2:00 pm Implementing Image Pyramids Efficiently in Software Michael Stewart, Polymorphic Technologies</div> <div>2:10 – 2:40 pm Overcoming Bias in Computer Vision—A Business Imperative Will Byrne, Entrepreneur</div> <div>2:50 – 3:20 pm Big and Fast: The New Age of Embedded Deep Learning Fred Soo, Mythic</div> <div>3:30 – 4:00 pm Architecting a Smart Home Monitoring System with Millions of Cameras Hongcheng Wang, Comcast</div> <div>4:10 – 4:40 pm Improving and Implementing Traditional Computer Vision Algorithms Using DNN Techniques Paul Brasnett, Imagination Technologies</div>	<div>1:30 – 2:30 pm Approaches for Energy-efficient Implementation of Deep Neural Networks Vivienne Sze, MIT</div> <div>2:50 – 3:50 pm Introduction to Optics for Embedded Vision Jessica Gehlhar, Edmund Optics</div> <div>4:10 – 4:40 pm Introduction to Lidar for Machine Perception Mohammad Musa, DeepenAI</div> <div>4:50 – 5:20 pm Designing Vision Front Ends for Embedded Systems Friedrich Dierks, Basler</div> <div>5:30 – 6:00 pm Optimize Performance: Start Your Algorithm Development with the Imaging Subsystem Ryan Johnson, Twistthink</div>	<div>1:30 – 2:00 pm EXECUTIVE PERSPECTIVE Building up a Start-up in Embedded Vision: Lessons from Machine Vision Arndt Bake, Basler</div> <div>2:10 – 2:40 pm The Four Key Trends Driving the Proliferation of Visual Perception Jeff Bier, BDTI</div> <div>2:50 – 3:20 pm From 2D to 3D: How Depth Sensing Will Shape the Future of Vision Guillaume Girardin, Yole Developpement</div> <div>3:30 – 4:00 pm Intelligent Consumer Robots Powering the Smart Home Mario Munich, iRobot</div> <div>4:10 – 4:40 pm How to Get the Labeled Data for Free Matt King, IUNU</div> <div>5:00 – 6:00 pm Vision Tank Competition AiFi Presented by Jo��o Diogo Falc��o Aquifi Presented by Carlo Dal Mutto Boulder AI Presented by Dan Connors Sturfee Presented by Anil Cheriya��at VirtuSense Technologies Presented by Deepak Gaddipati</div>	<div>1:30 – 2:00 pm Enabling Software Developers to Harness FPGA Compute Accelerators Bernhard Friebe, Intel</div> <div>2:10 – 2:40 pm Deep Learning in MATLAB: From Concept to Optimized Embedded Code Girish Venkataramani and Avi Nehemiah, Mathworks</div> <div>2:50 – 3:20 pm Achieving 20 TOPS in 10 Watts on Machine Learning Using Network Pruning on Zynq Ultrascale+ SoCs Nick Ni, Xilinx</div> <div>3:30 – 4:00 pm NovuTensor: Hardware Acceleration of Deep Convolutional Neural Networks for AI Mike Li, Novumind</div> <div>4:10 – 4:40 pm Embedding Programmable DNNs in Low-power SoCs Petrone�� Bigioi, FotoNation (an Xperi Company)</div>	<div>1:30 – 2:00 pm The Journey and Sunrise Processors: Leading-edge Performance for Embedded AI Kai Yu, Horizon Robotics</div> <div>2:10 – 2:40 pm Exploiting Reduced Precision for Machine Learning on FPGAs Kees Vissers, Xilinx</div> <div>2:50 – 3:20 pm Optimizing Your System Software and BSP for Embedded Vision and AI Daniel Sun, Thundersoft</div> <div>3:30 – 4:00 pm Pilot AI Vision Framework: From Doorbells to Defense Jonathan Su, Pilot AI</div>