



2021
embedded
VISION
summit®
VIRTUAL | MAY 25-28

Introduction to Today's Program – How to Get the Most Out of the Summit

Jeff Bier

Edge AI and Vision Alliance

May 26, 2021



edge ai + vision
ALLIANCE

Pieter Abbeel Keynote – My Takeaways

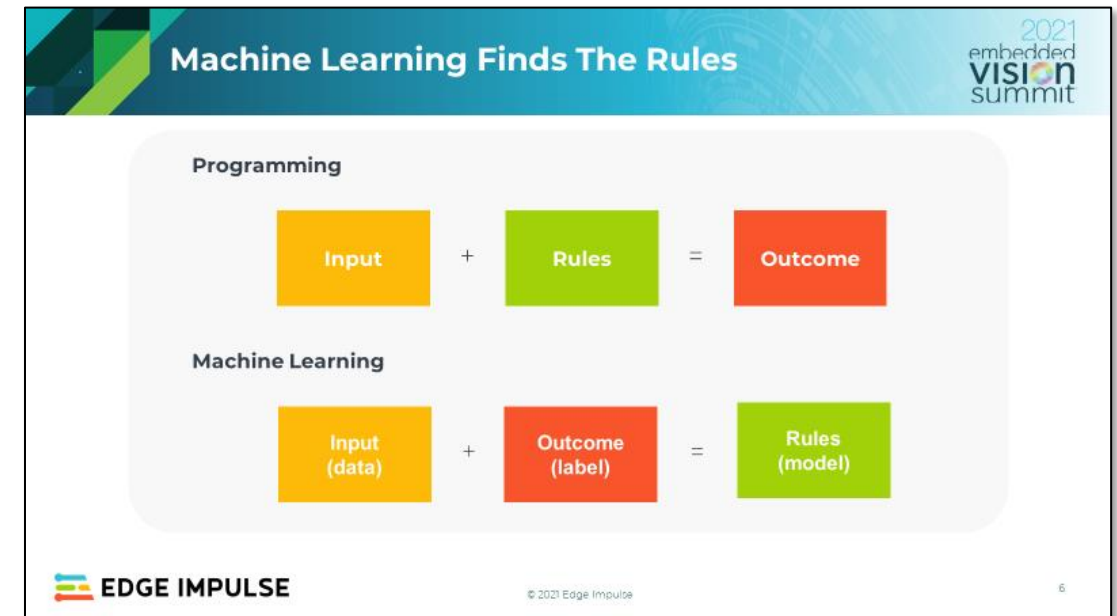
- To solve many real-world problems, we need AI systems that go beyond pattern recognition, to **perception-action**.
- **Reinforcement learning** (RL) is a promising approach for perception-action loops.
- There's been major progress to overcome previous limitations of RL.
- **Simulation, imitation, and contrastive learning** are powerful ways to collect and generate action-reward data.
- **State-based learning** is more effective than pixel-based learning – and can be applied to today's vision-based problems.
- **Real-world application requirements are much more difficult to achieve** than research goals.
- RL is beginning to be deployed successfully in selected commercial applications.



Pieter Abbeel
Professor, UC Berkeley

Zach Shelby – Edge Impulse: Democratization of Embedded ML

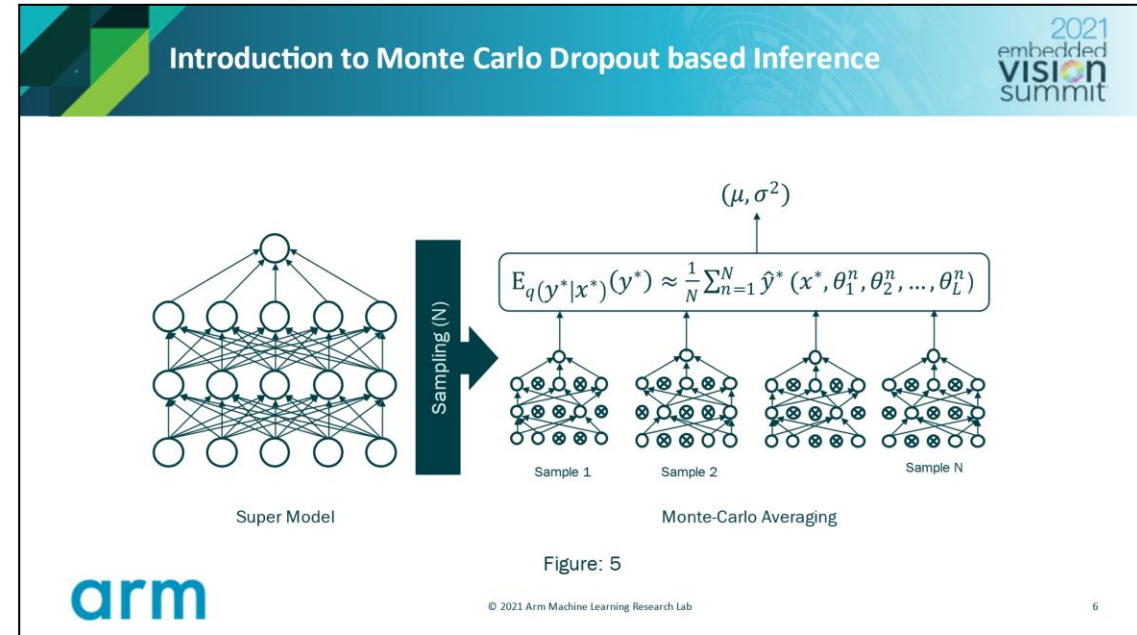
- We're in the early stages of a transition from code-driven to data-driven engineering.
- Increasingly sophisticated tools mean that not everyone who uses ML must be an ML expert.
- ML in production means more than training and deploying models: security, revision control, lifecycle management.
- Machine learning is being deployed on a vast range of embedded processors – from low-end MCUs up.



Source:
Zach Shelby,
Edge Impulse

Partha Maji (ARM) – Dataset Shifts

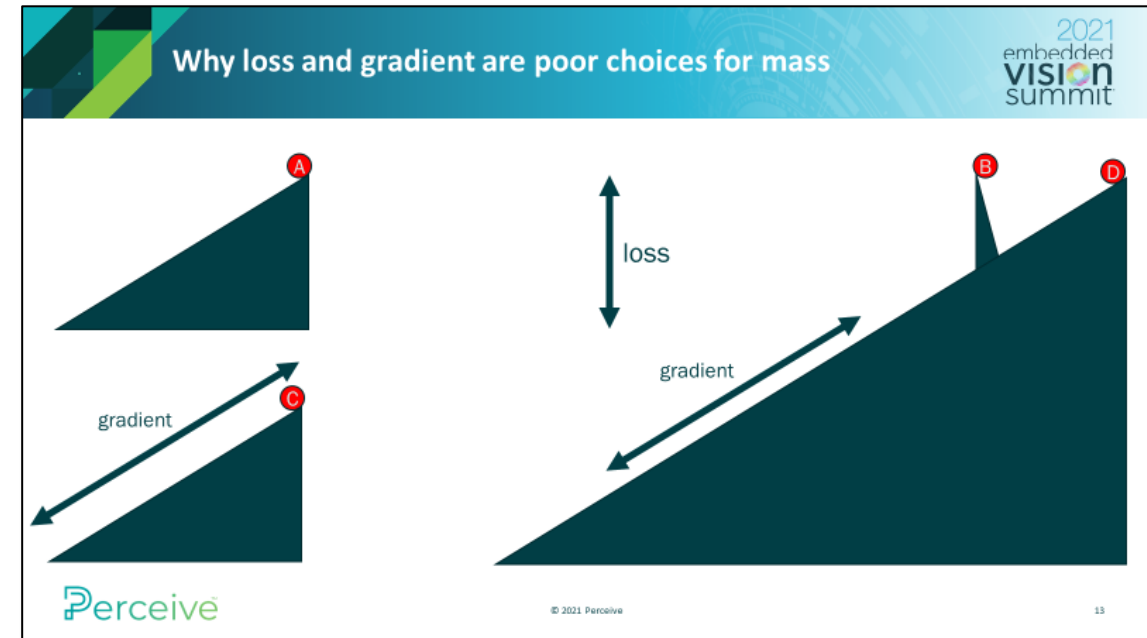
- In object detection, spatial quality is as important as label quality.
- A new metric for object detection, “probabilistic detection quality,” captures performance of both the “what” and the “where”.
- Monte Carlo dropout based inference – ensemble averaging but within a single network!
- Improved performance demonstrated for YOLO v3.



Source:
Partha Maji ARM

Steve Teig (Perceive) – Bias in ML

- Bias is pervasive in neural networks due to training set data class imbalance
- In some applications such as face recognition, this translates into discrimination
- Need to optimize for worst-case accuracy rather than average accuracy
- New idea: Re-massing – in training, rare data with more work to do gets more time to do it



Source: Steve Teig, Perceive

Today's Schedule

DAY 2
Wednesday May 26

9:00 am - 9:30 am PT **Intro Remarks**

9:30 am - 10:00 am PT **General Session**

10:00 am - 1:00 pm PT **Presentations**

1:00 pm - 2:00 pm PT **Technology Demos**

Conference Tracks

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FUNDAMENTALS

INTRODUCTION TO DNN MODEL COMPRESSION TECHNIQUES

 On-Demand Fundamentals



Sabina Pokhrel

Customer Success AI Engineer - Xailient

TECHNICAL INSIGHTS

A HIGHLY DATA-EFFICIENT DEEP LEARNING APPROACH

 Live Streaming [Technical Insights](#)



Patrick Bangert

VP of AI - Samsung SDSA

ENABLING TECHNOLOGIES

EFFICIENT VIDEO PERCEPTION THROUGH AI

 Live Streaming [Enabling Technologies](#)



Fatih Porikli

Senior Director - Qualcomm AI Research

BUSINESS INSIGHTS

IMPROVING NURSING CARE WITH PRIVACY-SENSITIVE EDGE COMPUTER VISION

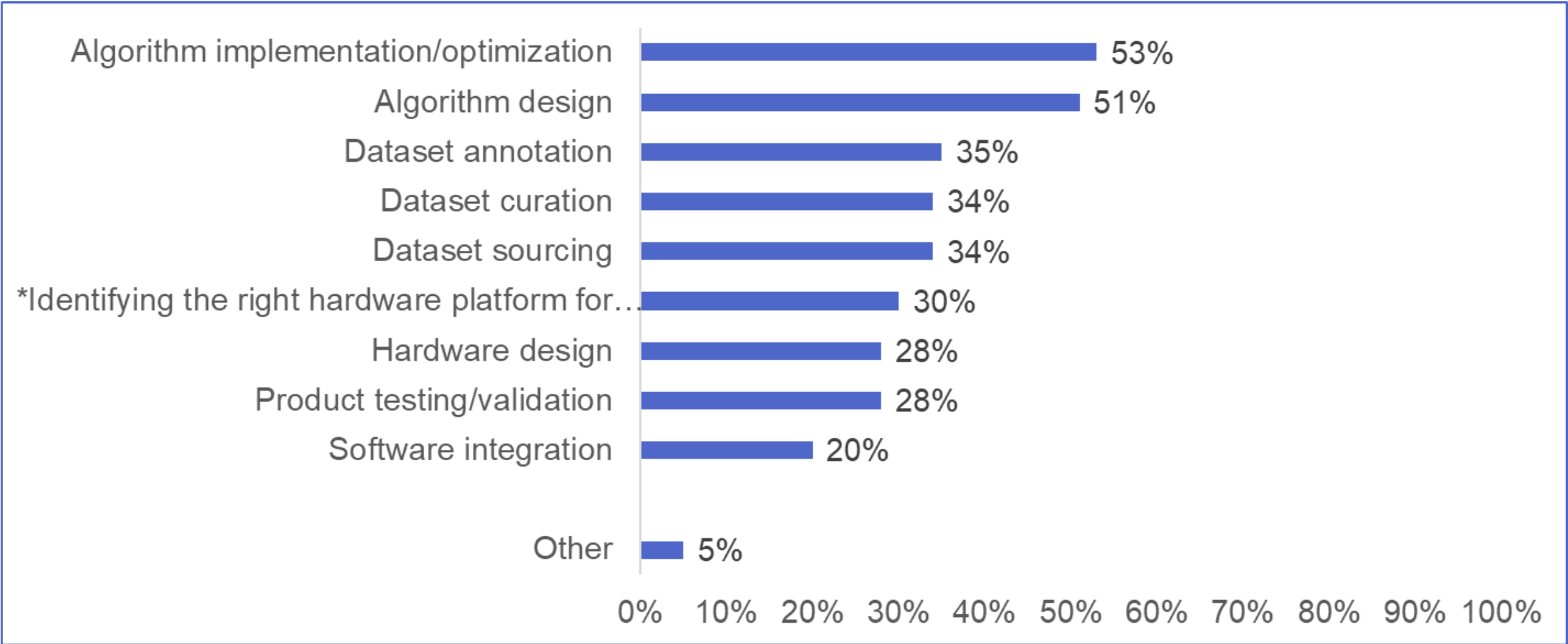
 Live Streaming [Business Insights](#)



Harro Stokman

Chief Executive Officer and Founder - Kepler Vision Technologies

Most Challenging Areas of Computer Vision Product Development



Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2020*

On-Demand-Only Content

- 28 high-quality sessions in the **On-Demand Only** section!
- Fundamentals, Technical Insights, and Business Insights tracks

INTRODUCTION TO DNN MODEL COMPRESSION TECHNIQUES

On-Demand Fundamentals

Recording Available



Sabina Pokhrel

Customer Success AI Engineer - Xailient

APPLYING THE RIGHT DEEP LEARNING MODEL WITH THE RIGHT DATA FOR YOUR APPLICATION

On-Demand Technical Insights

Recording Available



Hila Blecher-Segev

Computer Vision and AI Research Associate - Vision Elements

THE TRANSFORMATION FROM IMAGING TO SENSING: DRIVING A MARKET REVOLUTION

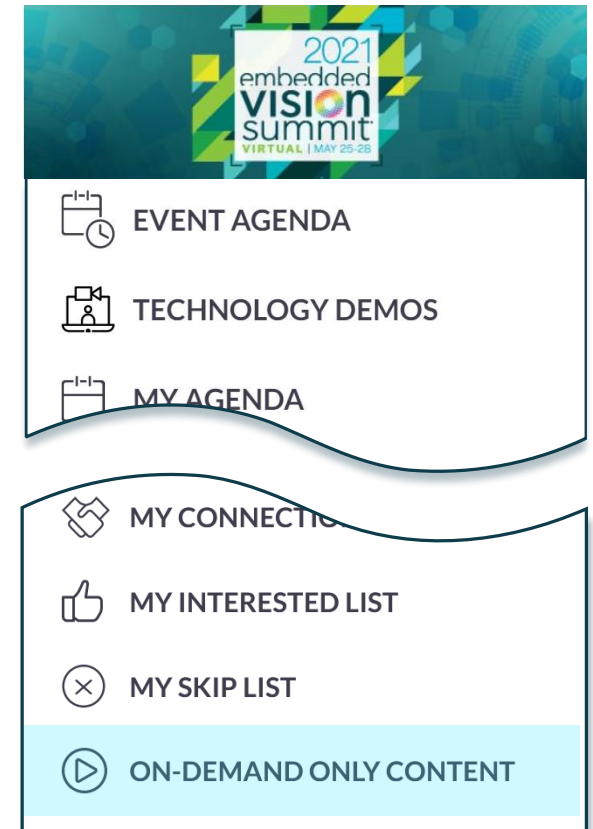
On-Demand Business Insights

Recording Available



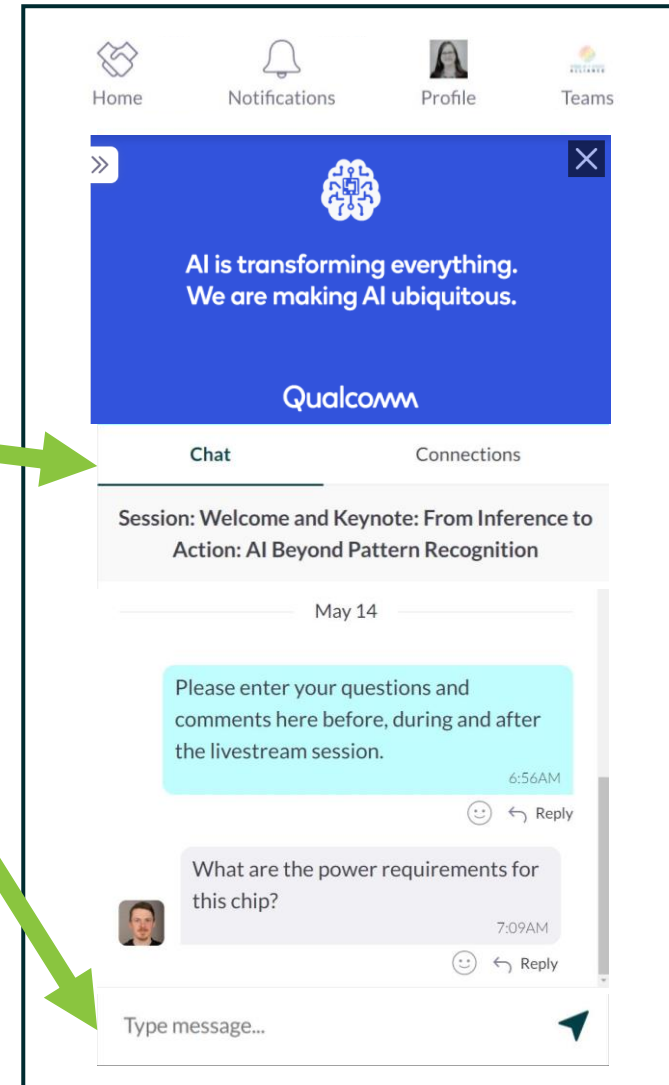
Pierre Cambou

Principal Analyst - Yole Développement

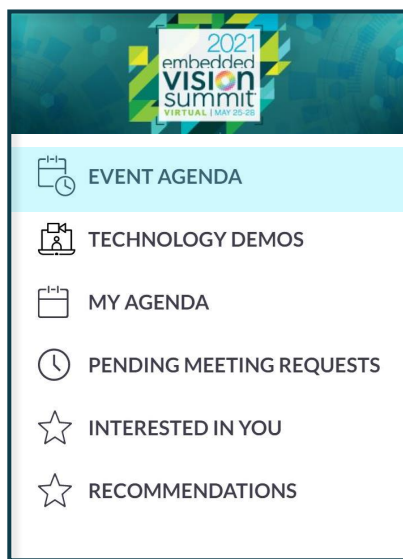


Questions for the Speaker?

Ask your questions to our speakers any time using the Chat tab.



Recordings of Previous Live Sessions



To access recordings of sessions previously presented live, click on “Event Agenda,” then scroll up through the agenda.

A screenshot of the 'Event Agenda' page. At the top, there's a header with the title 'Event Agenda' and three filter buttons: 'Dates', 'Tracks', and 'Location'. A notification box on the right says 'Session recording is available to watch now.' and contains a red 'Watch Recording' button with a play icon. A green arrow points upwards from below towards this button. Below the filters, the text 'Happening Now' is followed by 'All times shown for America/Los_Angeles'. The date 'Tuesday 25 May' is displayed. A session is listed for '9:00am - 10:00am' with a 'Livestream' tag. The session title is 'WELCOME AND KEYNOTE: FROM INFERENCE TO ACTION: AI BEYOND PATTERN RECOGNITION'. Below the title, it says 'Live Streaming Keynote'. Two speakers are listed: 'Jeff Bier' (Founder, Edge AI and Vision Alliance / President, BDTI - Edge AI and Vision Alliance) and 'Pieter Abbeel' (Director, Berkeley Robot Learning Lab and Co-Director, Berkeley Artificial Intelligence Lab - University of California, Berkeley). At the bottom right, there are two buttons: 'Send to calendar' and 'Added to'.

Variety of Session Formats



ENABLING TECHNOLOGIES

**For Vision and Edge AI,
Are Today's CPUs
Really Old-School?**



Gary Brown
Director of Edge AI
Marketing
Intel

AJ Frazer
VP Business
Development
Agent VI

**Sheldon
Fernandez**
CEO
DarWinAI



OVER-THE-SHOULDER

**From Start to Finish:
Build Industrial
Embedded ML Solutions
on CPUs and MCUs**



Daniel Situnayake
Founding TinyML Engineer
Edge Impulse



EXPERT BAR

**Q&A on Qualcomm
Snapdragon Camera
Technologies**



Judd Heape
VP of Product Management
for Camera, Computer Vision
and Video Technology
Qualcomm Technologies, Inc.



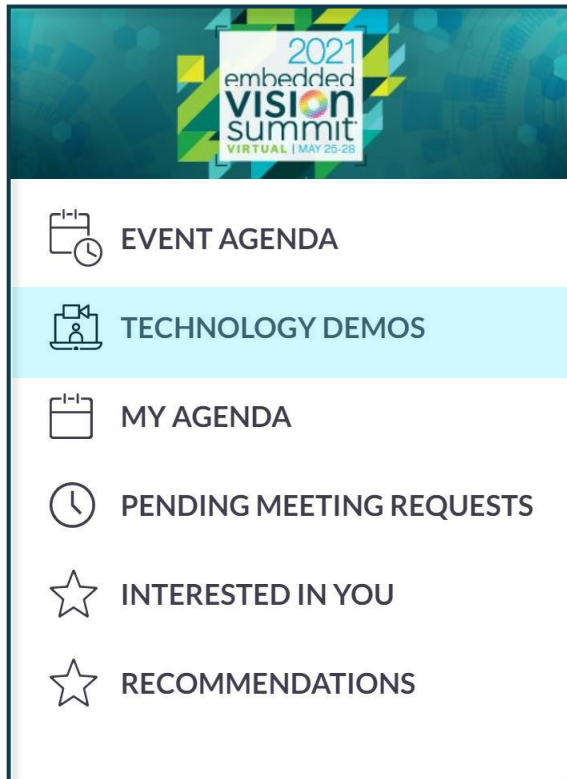
TECHNICAL INSIGHTS

**Interview: Developing and
Deploying a Privacy-
Preserving Vision-Based
Sensor System for
Commercial Real Estate**



Luke Murray
Co-Founder and CTO
XYSense

Fast-Paced Live Technology Demos



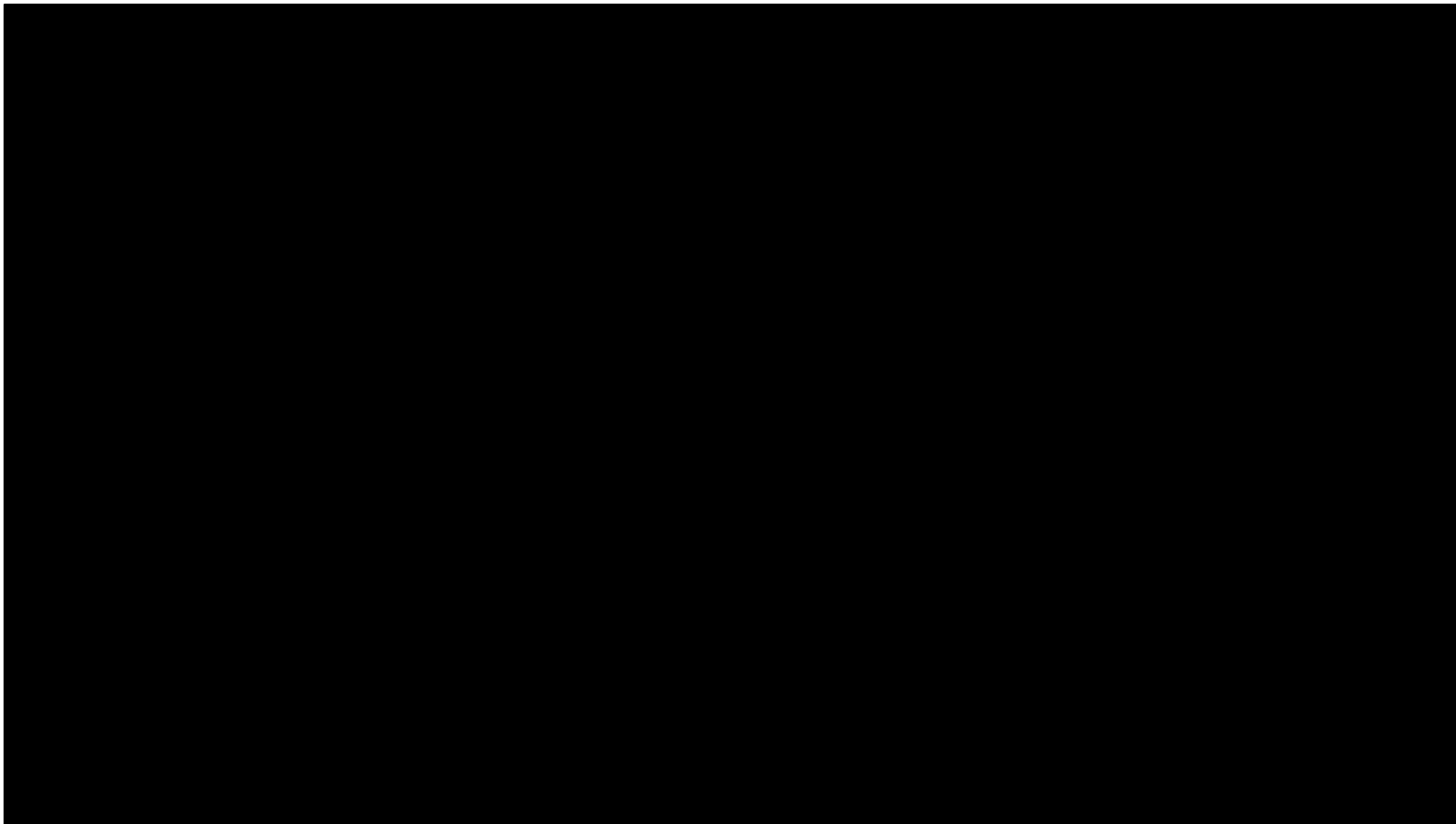
Find the building block technologies you need with fast-paced, live Technology Demos!

TODAY!

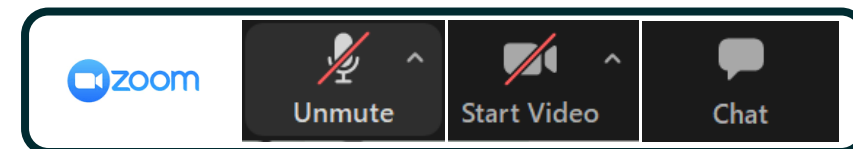
1:00 pm – 2:00 pm PT

Technology Demos Format

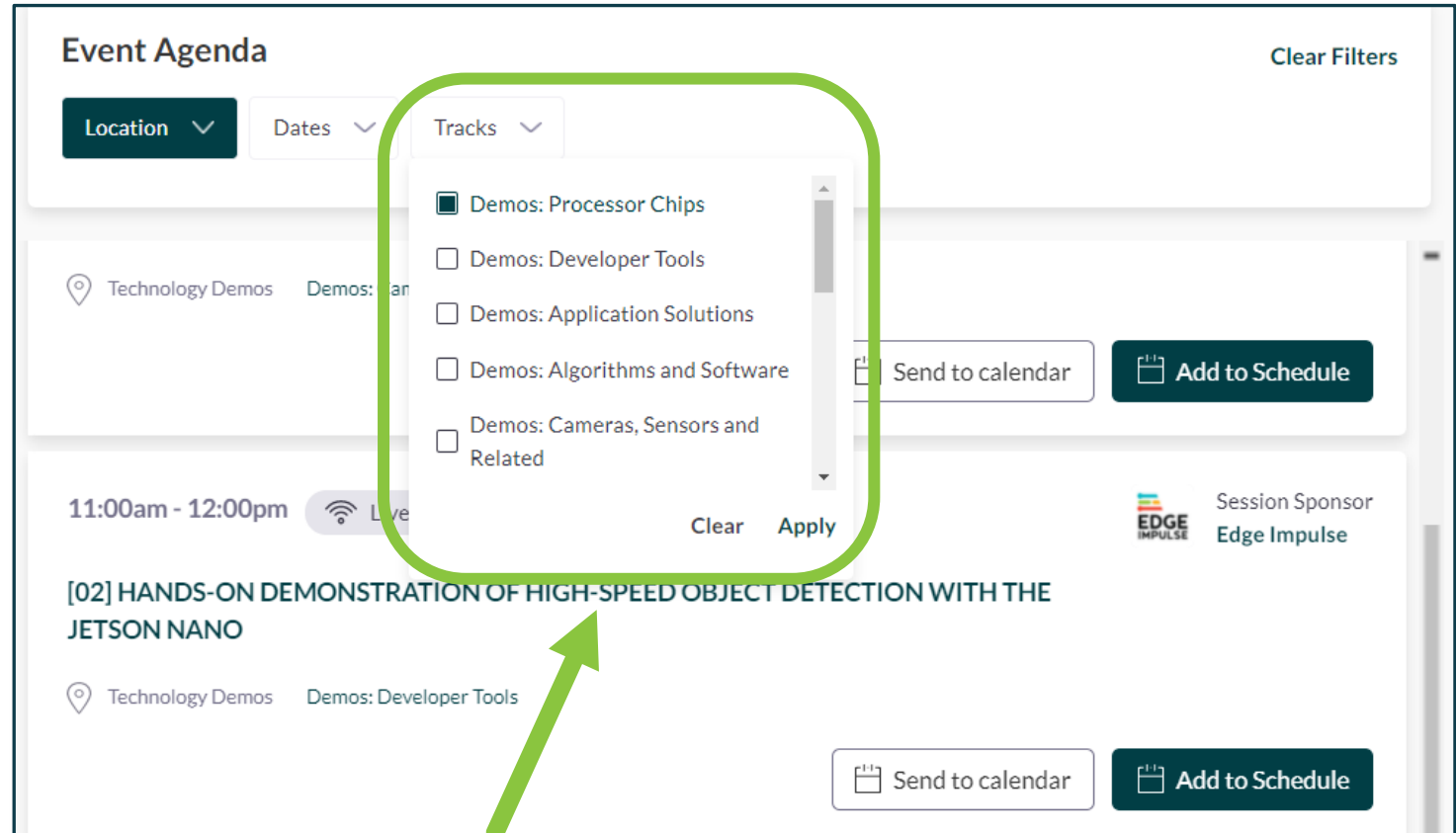
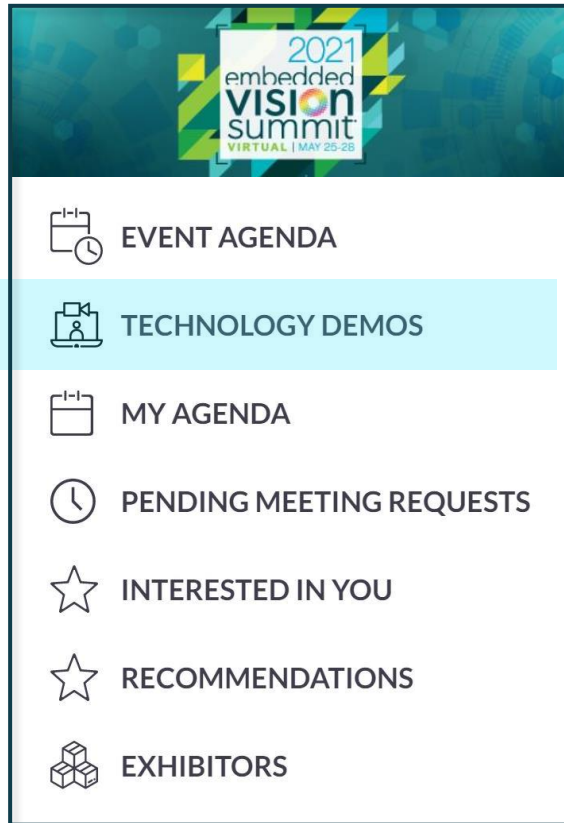
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Get your questions answered →




Filter the Demos



Filter by track to hone in the demos of interest to you

Add Demos to Your Calendar



- EVENT AGENDA
- TECHNOLOGY DEMOS**
- MY AGENDA
- PENDING MEETING REQUESTS
- INTERESTED IN YOU
- RECOMMENDATIONS

[06] WRITE ONCE, DEPLOY ANYWHERE WITH OPENVINO

Technology Demos Demos: Developer Tools

Send to calendar Add to Schedule


11:00am - 12:00pm Livestream

intel Session Sponsor Intel

[07] ACCELERATE THE DEVELOPMENT OF EDGE INTELLIGENCE SOLUTIONS WITH INTEL'S EDGE SOFTWARE HUB

Technology Demos Demos: Developer Tools

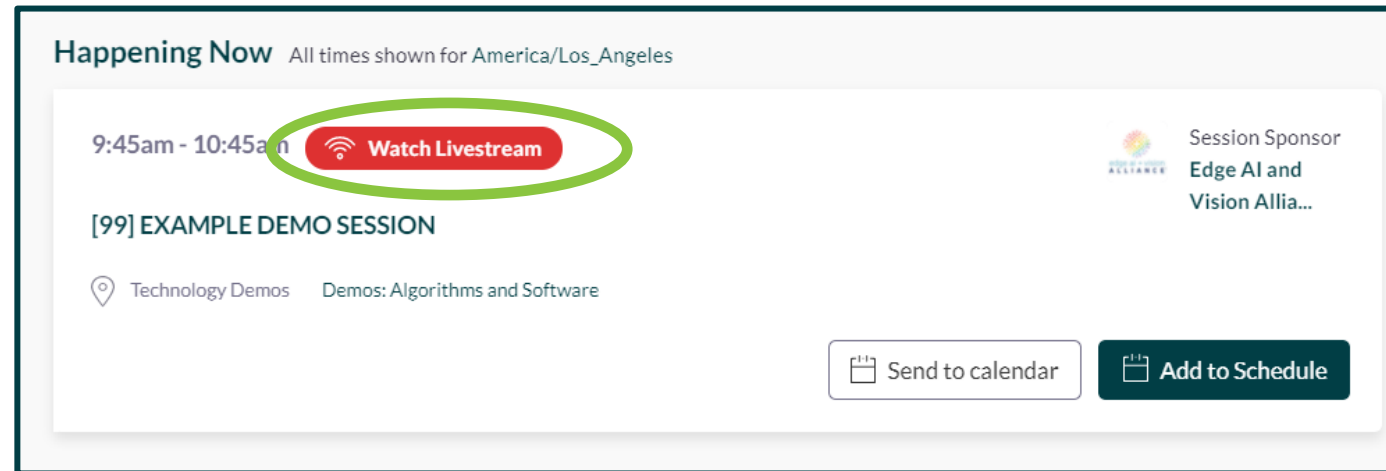
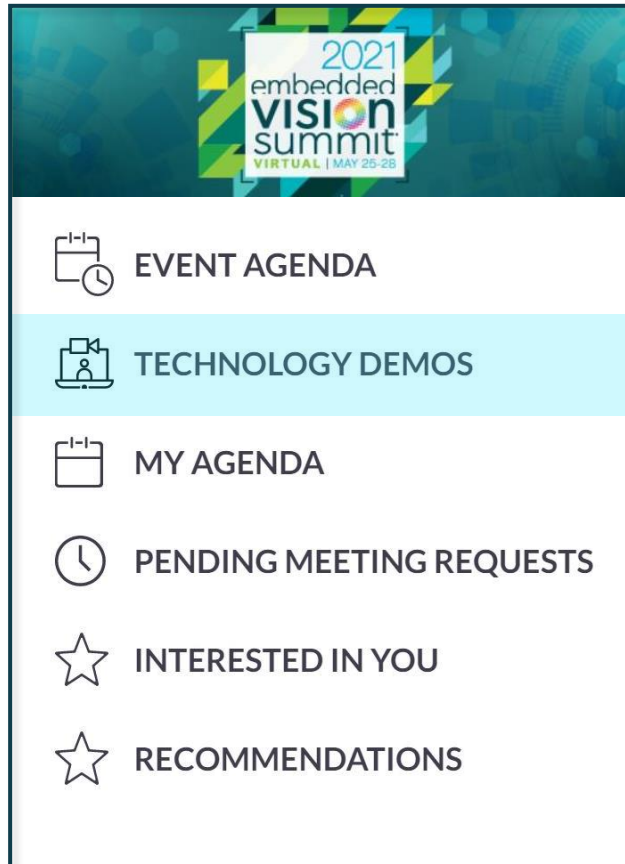
Send to calendar Add to Schedule



Click “Send to Calendar” to add to your Outlook or Google calendar.

Demos Repeat Every 15 Minutes

Demos will repeat every 15 minutes within their scheduled one-hour live blocks each day. Most demos appear every day of the event.



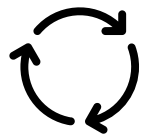
Are You a Safari User?

Safari users will experience problems connecting to Zoom audio.

Please use a different browser to visit the live Technology Demos.



Problems with audio/video browser permissions?



Refresh your browser window.

Your browser is preventing access to your microphone.
[Learn how to allow access to your microphone.](#)

Still Need Help?

If you're still having trouble...

Reach out to our support team via the Chat or Help icon in the lower left of your screen.



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an ASUS assoc. co.

 **algolux**

 **ALLEGRO**
Digital Video Technology


Ambarella

AMD 

arm

 **BASF**
We create chemistry

BDTi

 **blaize**[®]

 **brainchip**^{*}
The Neuromorphic Computing Company

cādence[®]

CEVA[®]

 **Chips Media**[™]

 **codeplay**[®]

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 **Connect Tech**

D3 Engineering

Deeplite

 **edge ai + vision ALLIANCE**

 **EDGE CORTIX**

 **EDGE IMPULSE**

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 **EYS3D**
Microelectronics

 **gyrfalcon technology**

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Empowering Intelligence

 **Imagination**

IMMERVISION

intel[®]

 **INUITIVE**

 **Kowa**

LAON PEOPLE

 **LATTICE**
SEMICONDUCTOR

LUXonjs

 **MICROCHIP**

 **morpho**

MYTHIC

 **nextchip**

nota
On-device AI

 **NVIDIA**

 **openfive**

 **Perceive**

 **PerceptiLabs**

Qualcomm

RENESAS

 **Synaptics**[®]

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 **tryo-labs**

 **UNITX**[®]


 **videantis**

 **visidon**

VISION VENTURES

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- MY AGENDA
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- INTERESTED IN YOU
- RECOMMENDATIONS
- EXHIBITORS**

Exhibitors

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Details

Products or Services Offered
Processor Boards and Modules, Silicon IP, ICs and SoCs, Development Tools, Standards and Camera Modules

Meetings with Qualcomm

View As: [Amy Ardzrooni](#) ▾
Qualcomm Representative: [Ben Cohen](#) ▾

+ Request a meeting ▾

Invitees
[Ben Cohen](#) +

Date
Monday 05/24/2021 ▾

Time
5:15pm - 5:30pm (America/Los_Angeles) ▾

Location
Virtual Meeting Room ▾

Personal Message
Why would you like to meet? Adding a personal message increases acceptance rates by 30%

25 meeting requests left until you reach the pending meeting limit.

Cancel Send

**Request a meeting
to efficiently
get expert answers
to your questions!**

CONGRATULATIONS 2021 WINNERS!



WINNER OF BEST EDGE AI SOFTWARE OR ALGORITHM

BlinkAI
Night Video

2021 EDGE AI + VISION PRODUCT OF THE YEAR

edge ai + vision ALLIANCE

WINNER OF BEST EDGE AI DEVELOPER TOOL

EDGE IMPULSE
Edge Impulse EON Compiler

2021 EDGE AI + VISION PRODUCT OF THE YEAR

edge ai + vision ALLIANCE

WINNER OF BEST CONSUMER EDGE AI END PRODUCT

eyetech
EyeTech EyeOn

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edge ai + vision ALLIANCE

WINNER OF BEST EDGE AI PROCESSOR

HALO
Hailo-8 AI Processor

2021 EDGE AI + VISION PRODUCT OF THE YEAR

edge ai + vision ALLIANCE

WINNER OF BEST CAMERA OR SENSOR

LUXonjs
OpenCV AI Kit with Depth

2021 EDGE AI + VISION PRODUCT OF THE YEAR

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WINNER OF BEST AUTOMOTIVE SOLUTION

MINIEYE
In-cabin Sensing Solution

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edge ai + vision ALLIANCE

WINNER OF BEST ENTERPRISE EDGE AI END PRODUCT

simbe
Tally 3.0

2021 EDGE AI + VISION PRODUCT OF THE YEAR

edge ai + vision ALLIANCE

Schedule-at-a-Glance

DAY 3 Thursday May 27

9:00 am-9:30 am PT
Intro Remarks

9:30 am-12:00 pm PT
Presentations

12:00 pm-1:00 pm PT
Technology Demos

1:00 pm-2:00 pm PT
Presentations

DAY 4 Friday May 28


9:00 am-9:30 am PT
Closing Remarks

9:30 am-10:00 am PT
Presentations

10:00 am-11:00 am PT
Technology Demos

11:00 am-2:00 pm PT
Presentations

See Who Wants to Connect With You...




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- INTERESTED IN YOU**
- RECOMMENDATIONS



Interested In You

List of profiles who have shown interest in you. By showing interest in these profiles you become connected and will be able to chat.



Chetan Khona Speaker
Director, Industrial, Vision, Healthcare & Sciences - Xilinx

 Skip

 Show Interest  Request a meeting ▾

Potential Handshake
Chetan Khona is interested in meeting you.

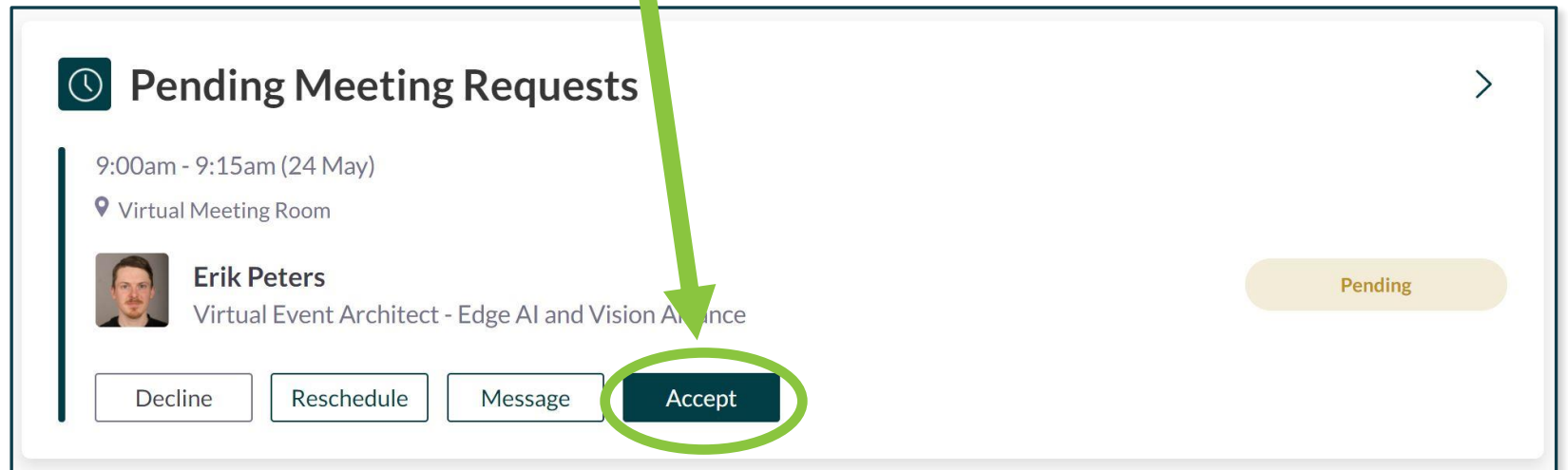
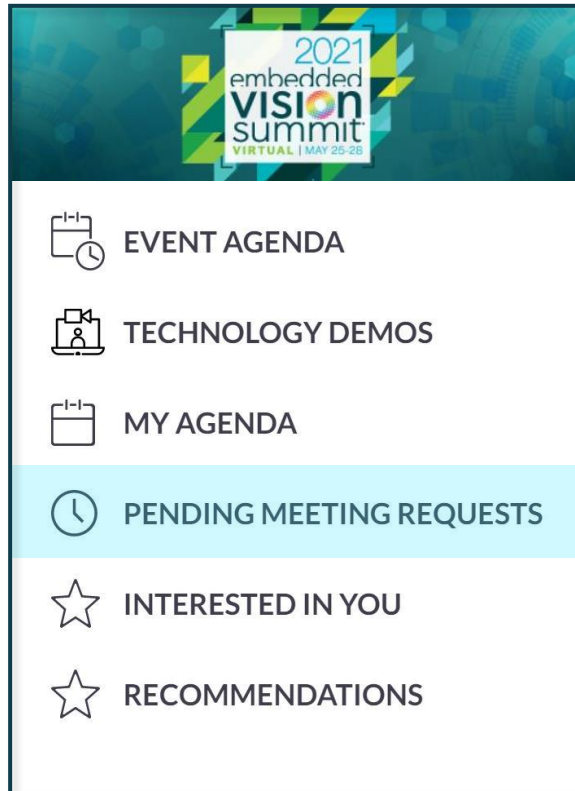
Common Connections
You are both connected to Jeff Bier and 2 others

Common Swipes
You are both interested in Edge AI and Vision Alliance

Click
“Show Interest”
to complete
the connection.

See Who Wants to Meet With You...

Accept meeting requests to schedule live conversations with colleagues.



Daily Remarks with Jeff Bier

On **May 27** (Thurs.) and **May 28** (Fri.) at 9 am PT I will:

- Recap Summit highlights from the past day or two
- Preview what's coming up next
- Share data and insights, including:
 - Results from the Edge AI and Vision Alliance's *Computer Vision Developer Survey*
 - Observations on key technology and industry challenges
 - "Lighthouse" applications
 - Market research highlights
- Join me!

Thursday 27 May

9:00am - 9:30am

 Livestream

INTRODUCTION TO TODAY'S PROGRAM - HOW TO GET THE MOST OUT OF THE SUMMIT

 Live Streaming General Session



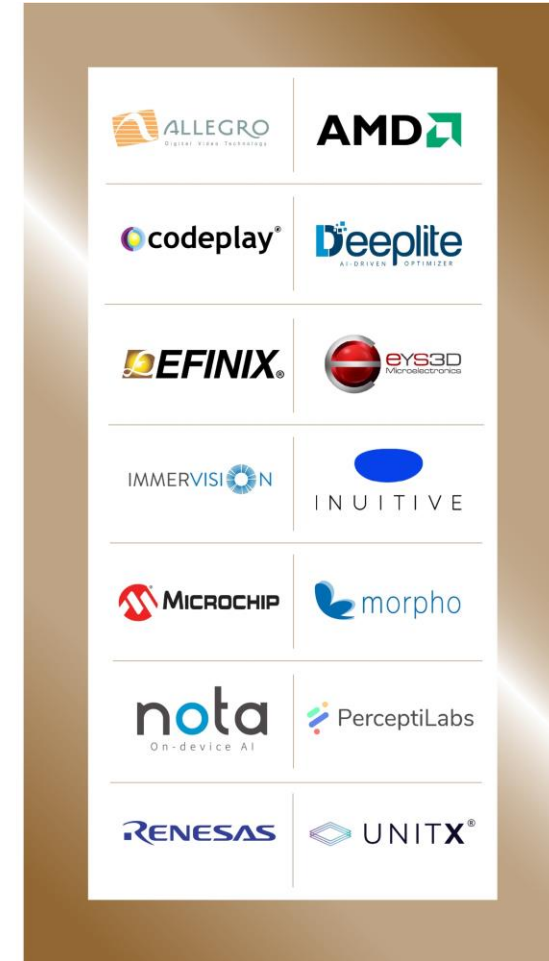
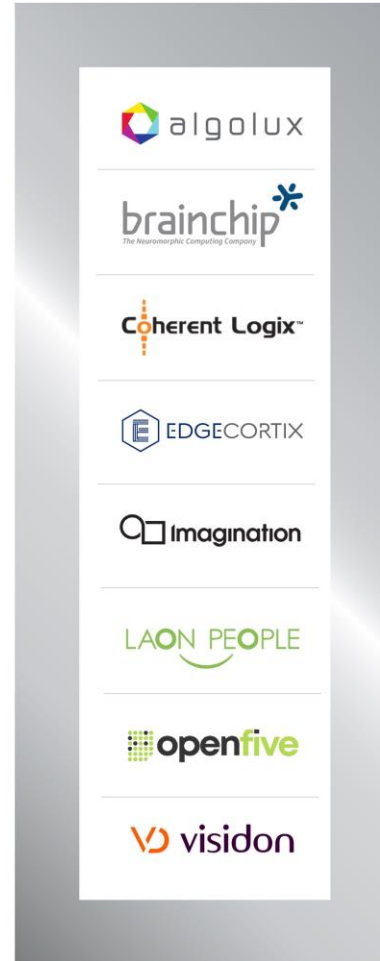
Jeff Bier

Founder, Edge AI and Vision Alliance / President, BDTI - Edge AI and Vision Alliance

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GENERAL SESSION

**What We Need to Transform Lives and
Industries with On-Device AI, Cloud and 5G**

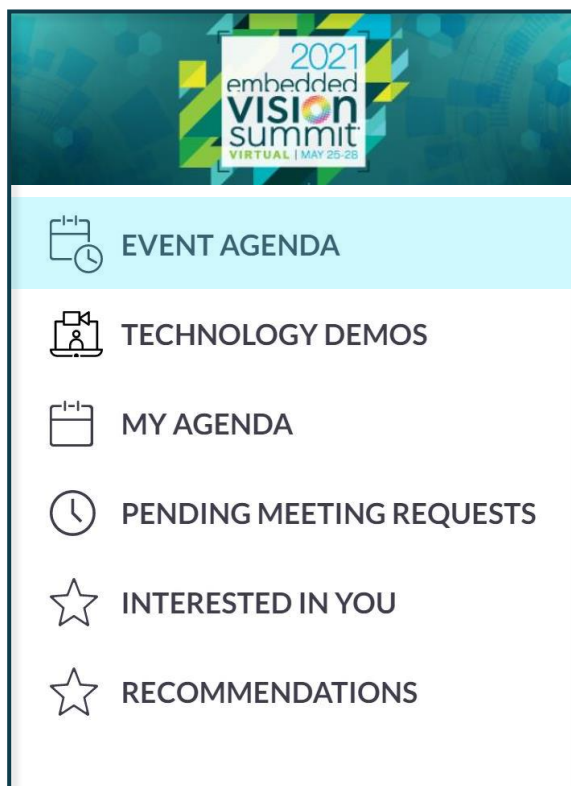


Ziad Asghar

VP Product Management, Qualcomm

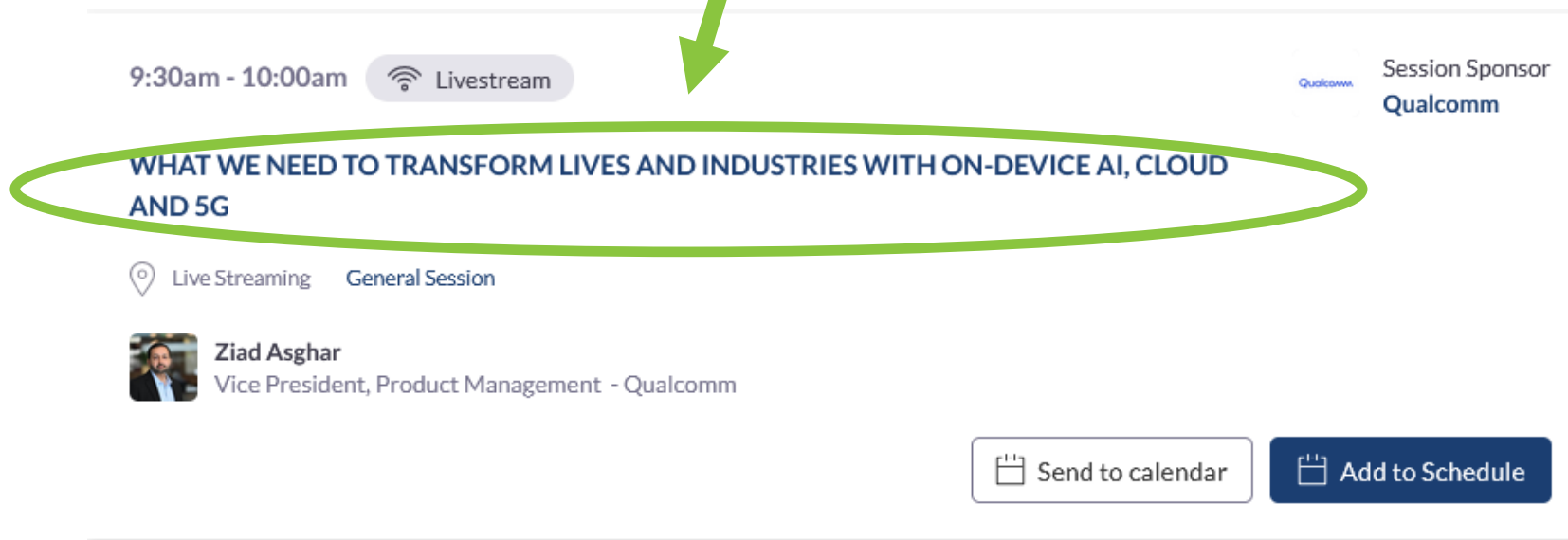
Find It on the Agenda

Click on the session title for details...



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9:30am - 10:00am Livestream

Session Sponsor Qualcomm

WHAT WE NEED TO TRANSFORM LIVES AND INDUSTRIES WITH ON-DEVICE AI, CLOUD AND 5G

Live Streaming General Session

 **Ziad Asghar**
Vice President, Product Management - Qualcomm

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...then press the “play” button to launch the stream.

