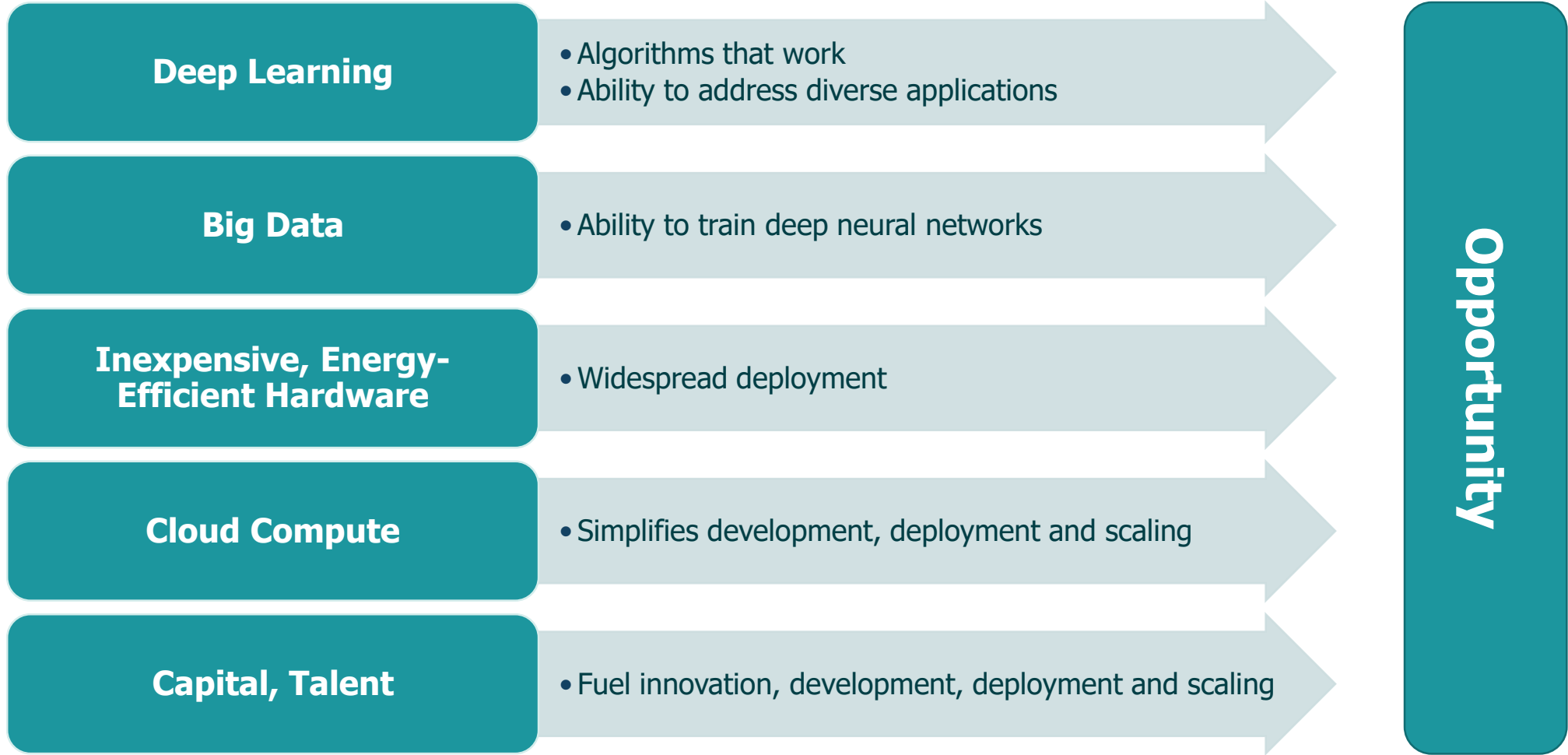




# A View from the Summit (Part 1)

Jeff Bier  
Founder, Edge AI and Vision Alliance  
President, BDTI  
May 17, 2022

# A Unique Era for Edge AI and Computer Vision



# Solving Real-World Problems at Scale



Pcmag.com



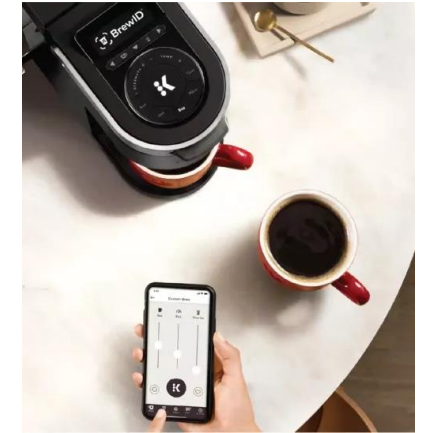
Dailymail.co.uk



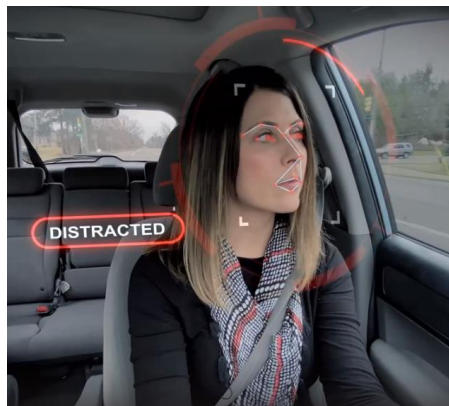
Visio.ai



Visio.ai



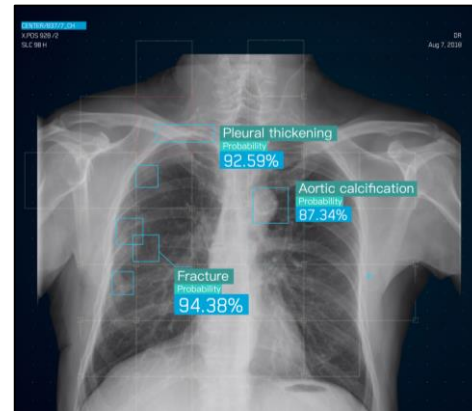
Tom'sguide.com



Just-auto.com



Vegetablegrowersnews.com



Global.infervision.com



Mashgin.com



# The Edge AI and Vision Alliance's Mission



To harness the potential of computer vision and edge AI, **product developers** need:

- Awareness of what's possible (and what's not) with vision and edge AI
- Skills to implement and integrate vision and edge AI capabilities
- Connections to suppliers and other resources

The Alliance makes these assets available to tens of thousands of system and application creators

For **Member companies**, the Alliance:

- Delivers timely insights into markets, technology, standards and applications
- Brings together technology suppliers, solution developers and partners
- Enables companies to become more visible as thought leaders

# Alliance Member Companies






# Visit the Alliance Website



[www.edge-ai-vision.com](http://www.edge-ai-vision.com)



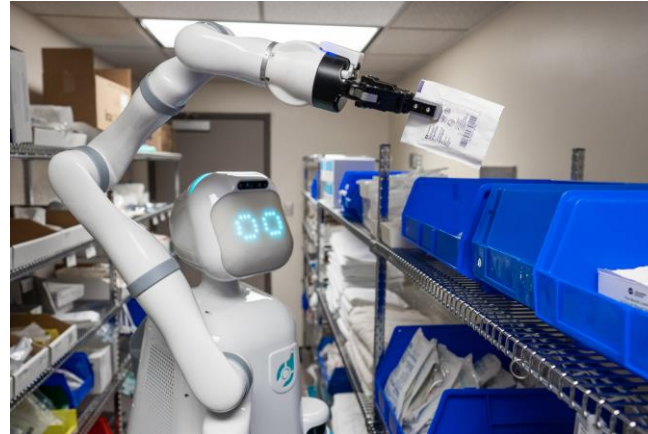


# Opportunities and Challenges

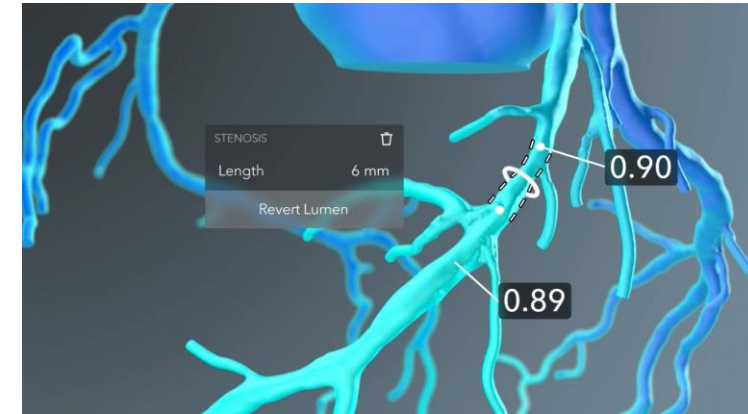
# Applications



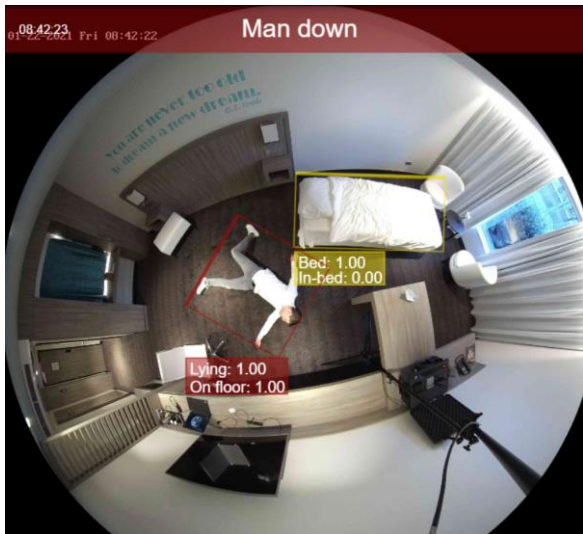
lowvisionofny.com



TechCrunch



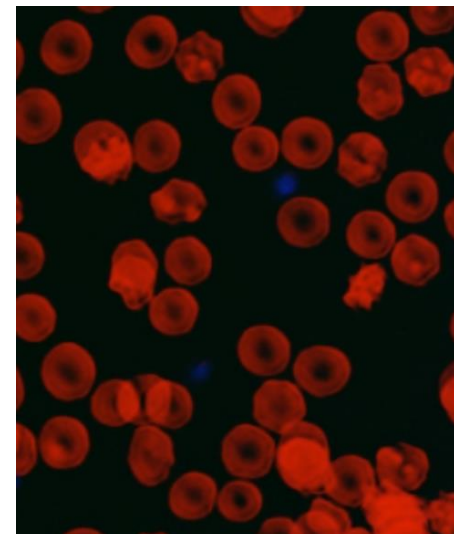
Dicardiology.com



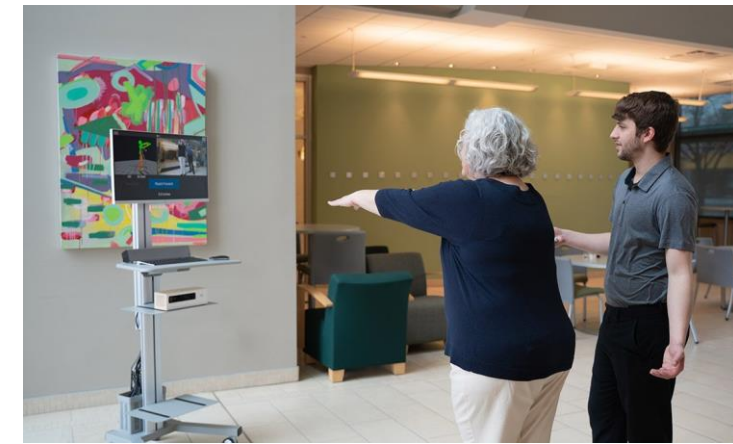
Keplervision.eu



myfitnessstore.com



Sight Diagnostics



longevity.technology



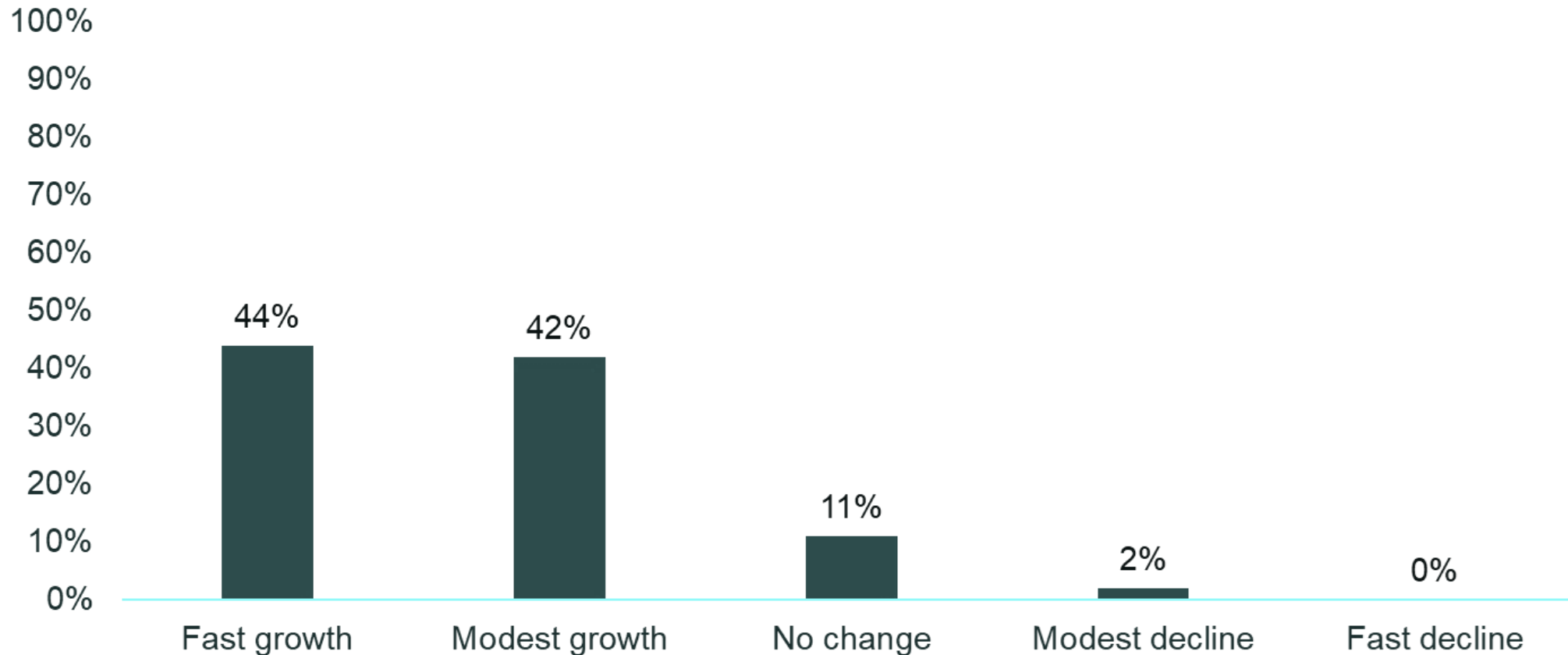


# Tempo Move



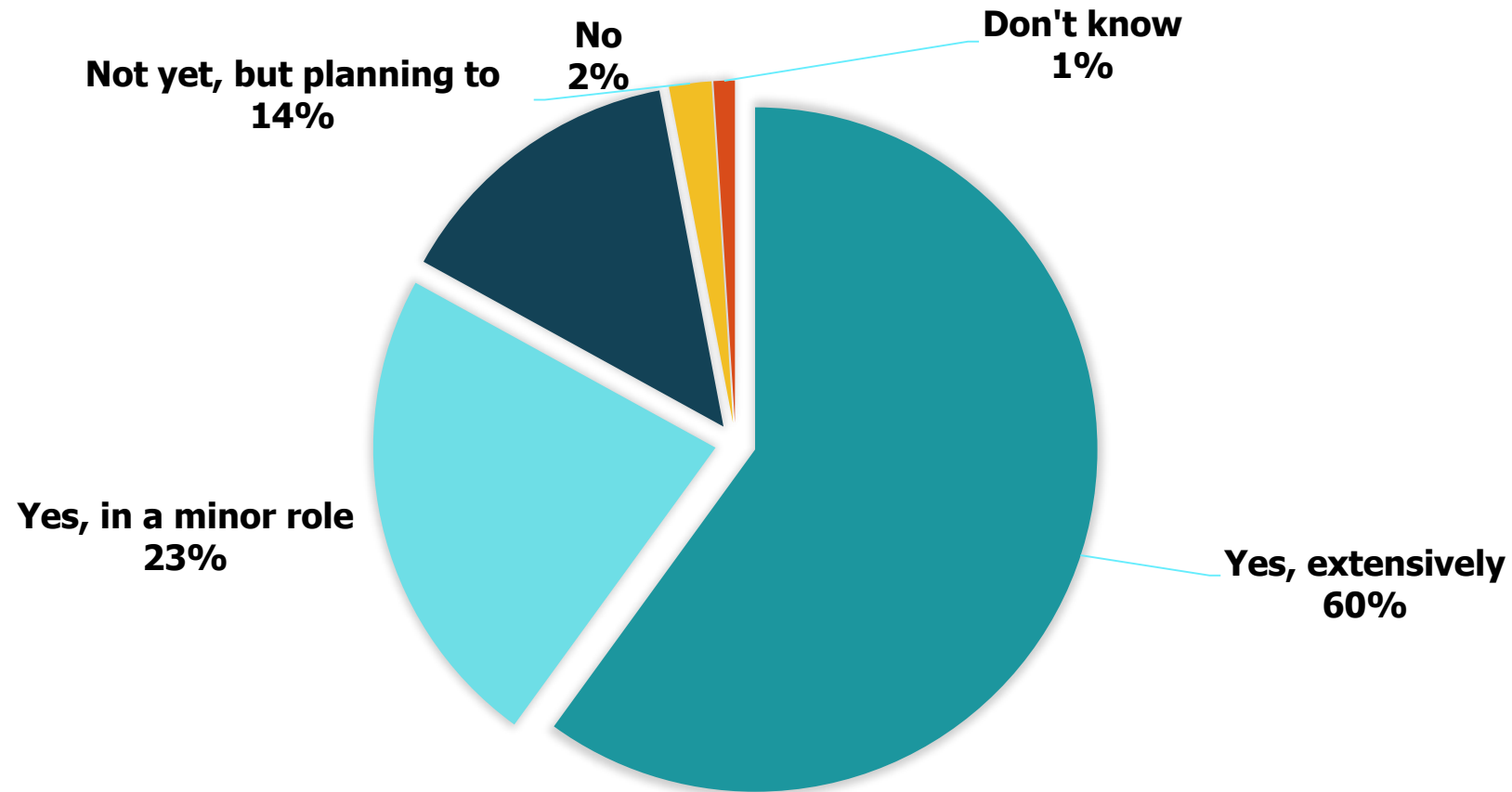
[https://youtu.be/UP\\_bhJ\\_0AG0](https://youtu.be/UP_bhJ_0AG0)

# Growth Predicted in Your Organizations Vision-Related Activity Over the Next Three Years



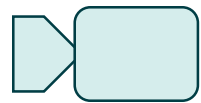
Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2020*

# Use of Neural Networks to Process Image or Video Data

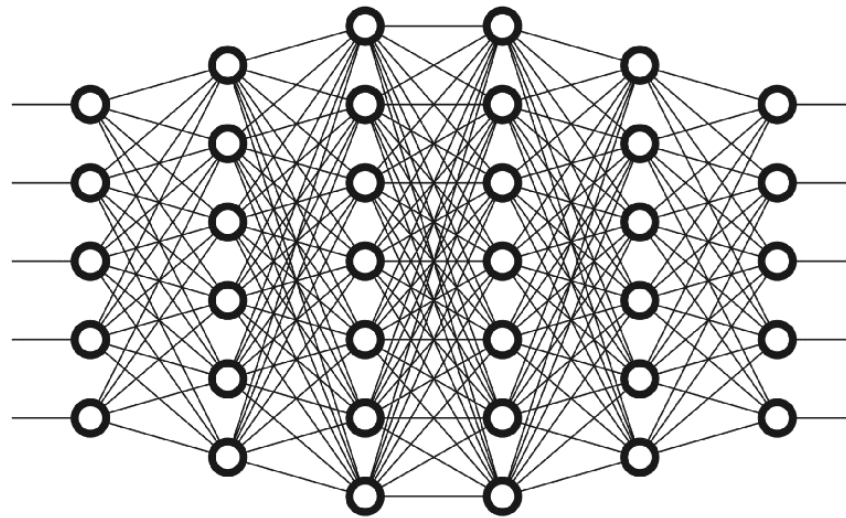


Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2021*

# Algorithms — What We Imagine



Camera



Trained Deep Neural Network



Command:  
*"Engage  
emergency  
braking"*

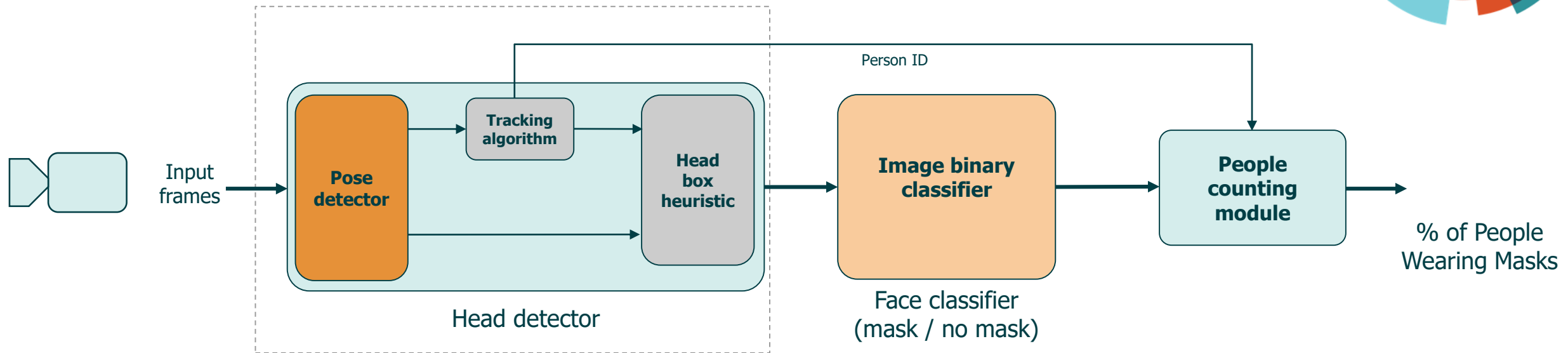
Useful Information

Image: freeCodeCamp.org



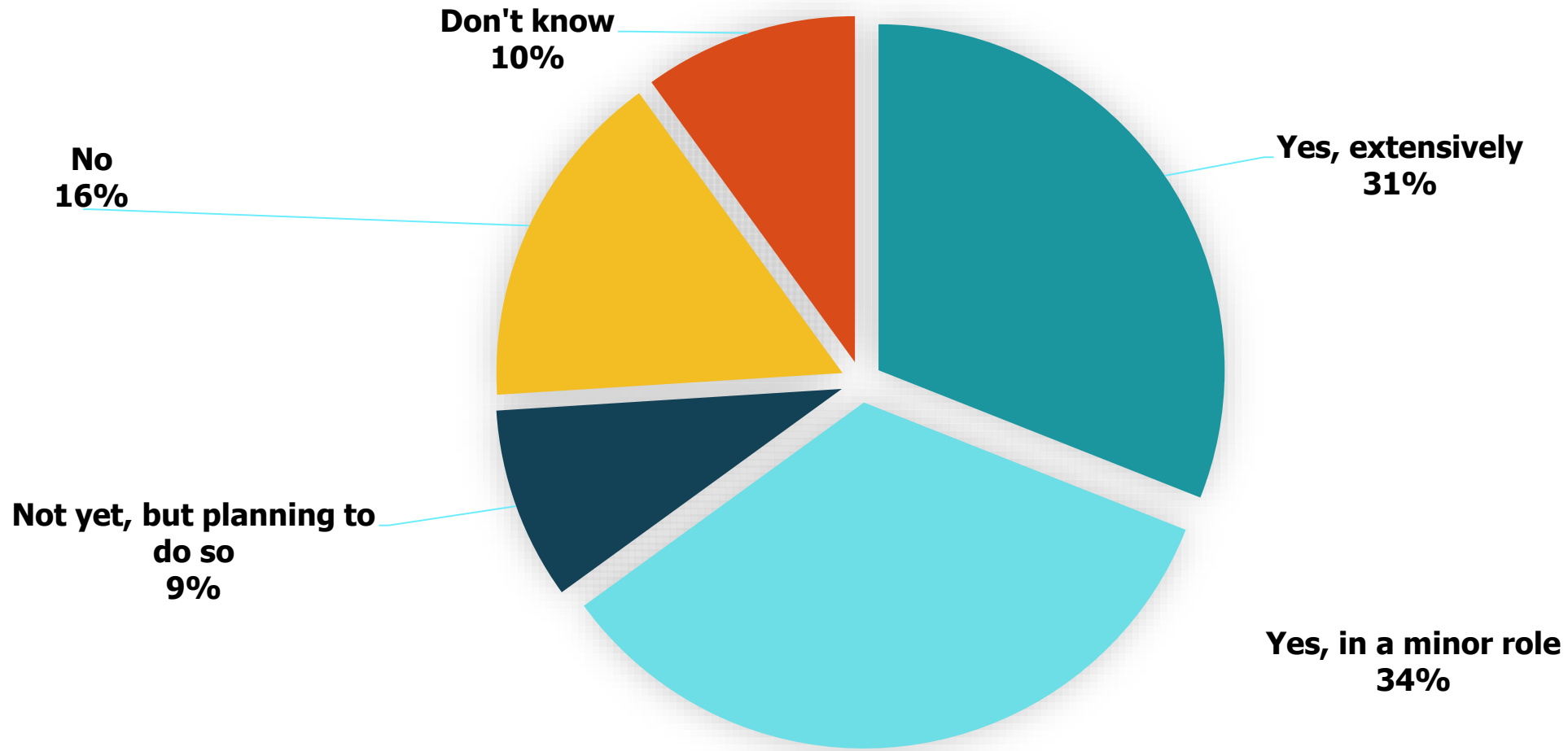
# Typical Composite Real-World Algorithm

## Estimating % of People Wearing Masks



Source: Tryolabs  
(diagram modified)

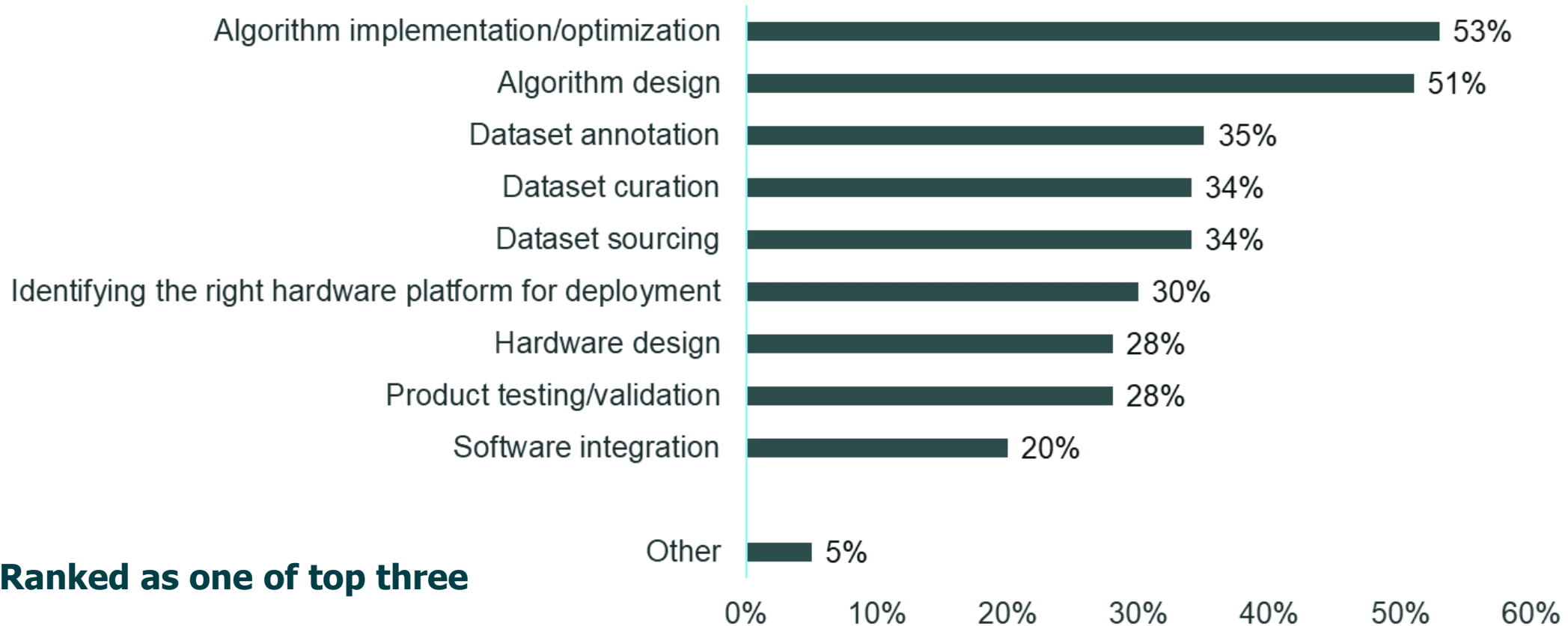
# Use of Non-DNN Computer Vision Algorithms to Process Image or Video Data



Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2021*



# Areas of Computer Vision Product Development Most Challenging



**Ranked as one of top three**

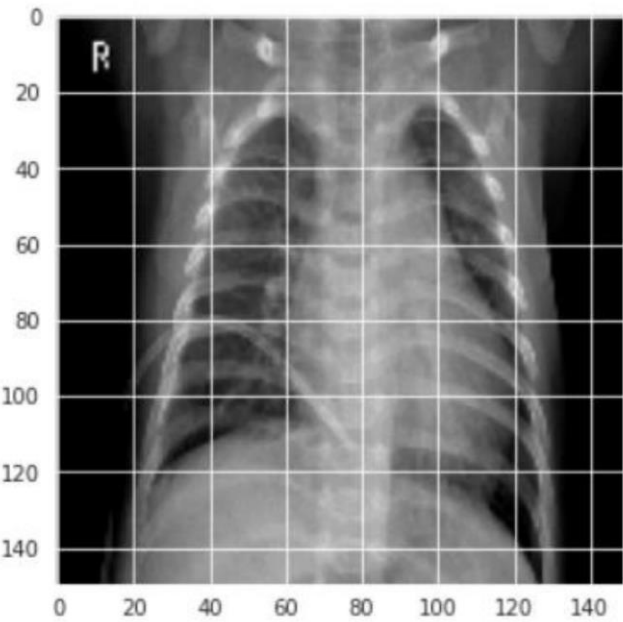
Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2020*



**Making the Most of Your Day**



# Let's Be Safe



Saxena, Singh, Gaidhane 2022



USDA

# Tuesday Schedule



9:00 - 11:10 am

**INTRODUCTION: A View from the Summit (Part 1)** – Jeff Bier  
**KEYNOTE: Event-Based Neuromorphic Perception and Computation: The Future of Sensing and AI** – Ryad Benosman  
**GENERAL SESSION: How Do We Enable Edge ML Everywhere? Data, Reliability and Silicon Flexibility** – Zach Shelby

11:10 - 11:25 am **Break**

11:25 - 12:30 pm

Technical Insights I	Technical Insights II	Fundamentals	Business Insights
----------------------	-----------------------	--------------	-------------------

12:30 - 1:30 pm **Lunch - Expo Hall**

1:30 - 3:10 pm

				Enabling Technologies I	Enabling Technologies II	Enabling Technologies III
--	--	--	--	-------------------------	--------------------------	---------------------------

12:30 - 8:00 pm  
**Technology Exhibits**  
 Expo Hall

3:10 - 4:15 pm **Break**

4:15 - 5:55 pm

--	--	--	--	--	--	--

6:00 - 8:00 pm

**6:00 - 8:00 pm Technology Exhibits Reception**  
 Expo Hall

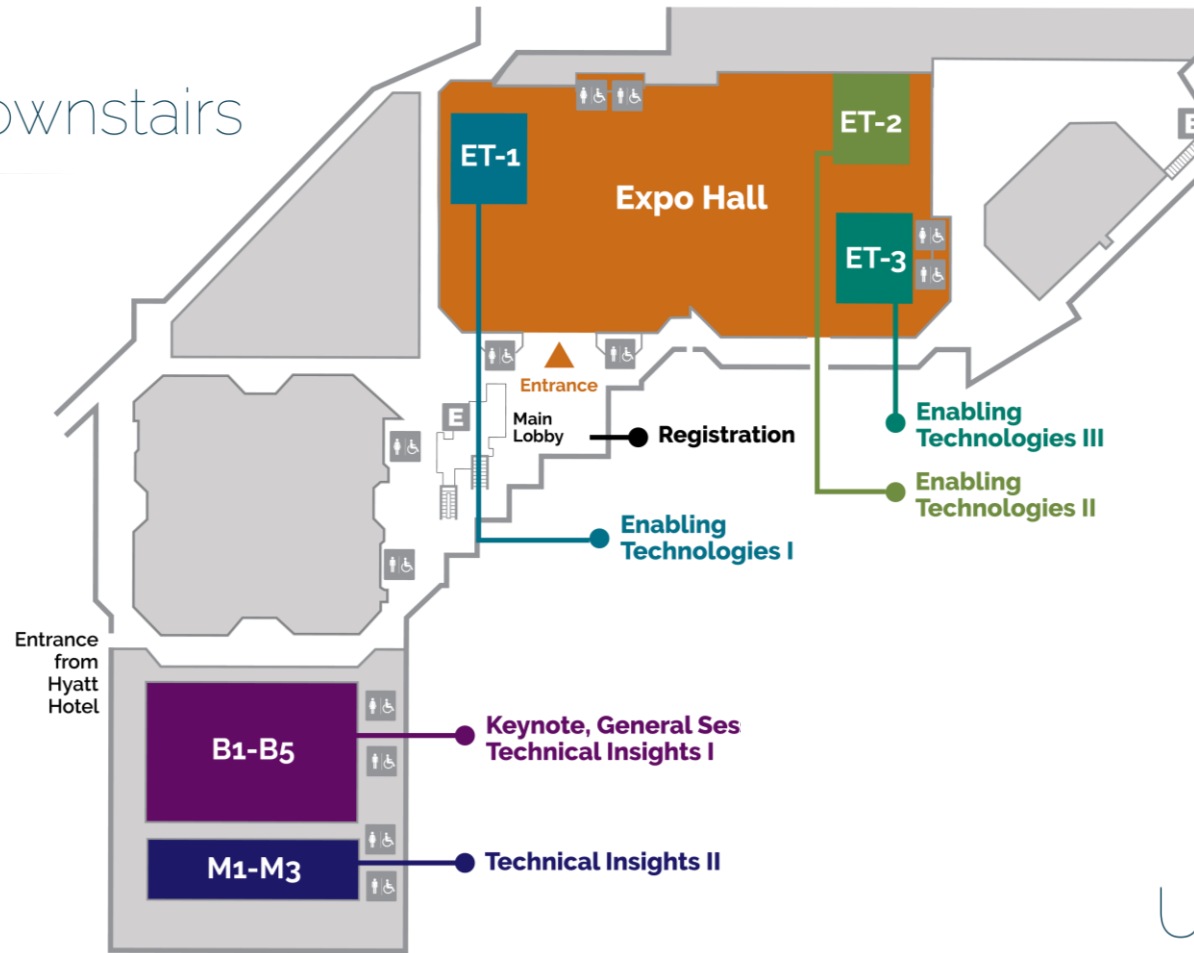
**6:00 - 6:30 pm Edge AI and Vision Product of the Year Awards** Expo Hall ET-3

**6:30 - 7:30 pm Women in Vision Reception**  
 Expo Hall ET-1

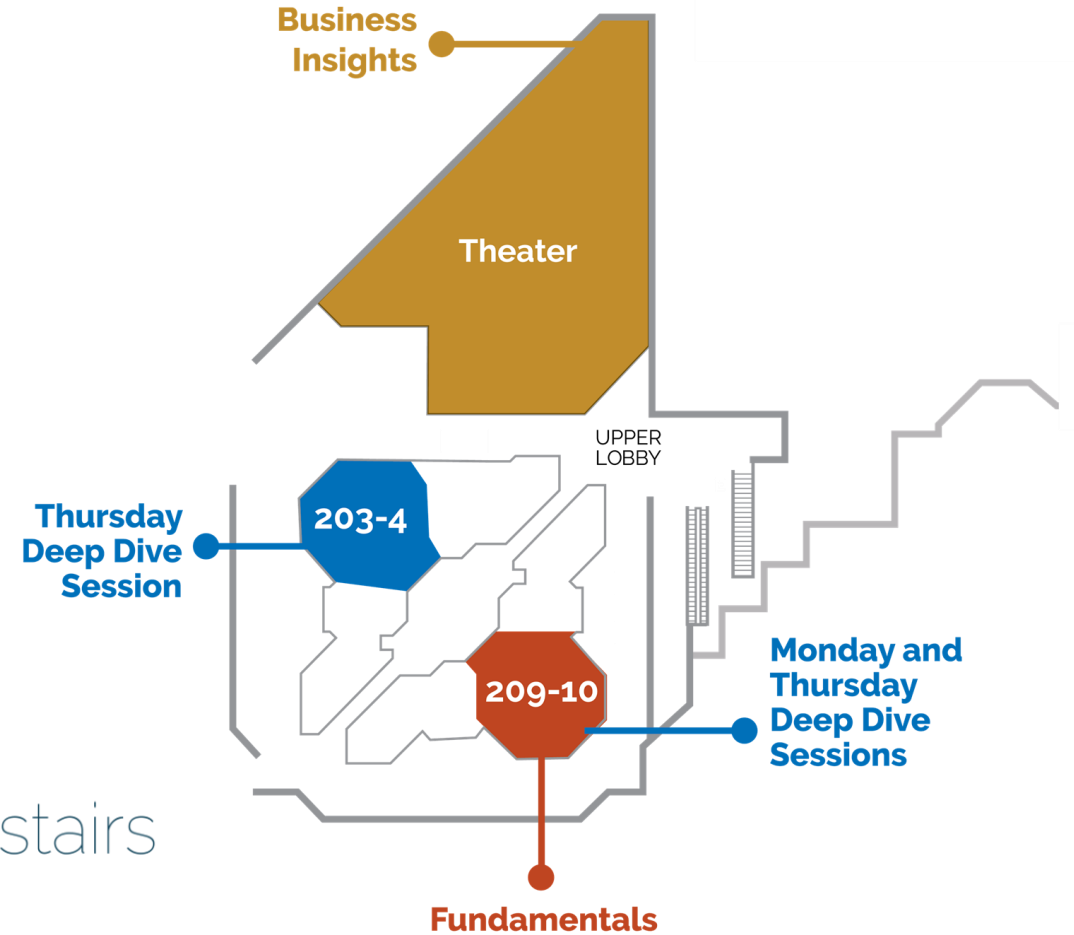
# Facility Map



Downstairs



Upstairs



## Processor Chips

AlphalCs.....	713
AMD (Advanced Micro Devices) ....	319
BrainChip .....	725
Coherent Logix.....	611
DEEPX .....	721
DeGirum.....	621
Efinix.....	406
eYs3D Microelectronics.....	802
Hailo .....	313
Intel.....	305
Inuitive .....	812
Lattice Semiconductor.....	519
MediaTek .....	518
MegaChips.....	723
Microchip Technology .....	508
Mythic.....	605
Nextchip.....	512
NVIDIA.....	806
Perceive.....	524
Renesas Electronics .....	408
STMicroelectronics.....	213
Synaptics .....	421
Xilinx: See AMD (Advanced Micro Devices) ....	319
XMOS.....	511

## Processor Boards and Modules

Arduino .....	422
Avnet.....	306
Blaize.....	506
Flex Logix .....	205
Lanner Electronics.....	513
Leopard Imaging.....	709
Luxonis .....	619
NVIDIA.....	806
Vision Components.....	417

## Silicon IP (Processors, Memory, Interconnect)

AiM Future .....	522
Arm.....	312
BrainChip .....	725
Cadence.....	317
CEVA DSP.....	620
Expedera.....	320
Flex Logix .....	205
Imagination Technologies ....	412
Oculi .....	710
OPENEDGES Technology .....	610
Plumerai .....	625
quadric .....	521
Roviero .....	504
Synopsys .....	719

## Hardware and Software Design, Development and Manufacturing Services

AI-Blox .....	424
Arrow Electronics .....	618
Au-Zone Technologies .....	606
BDTI .....	413
D3 Engineering .....	608
FRAMOS.....	609
iENSO.....	308
OpenFive.....	509
Tempo Analytics.....	706

## Development Tools and Training Data

Algolux.....	613
Amazon Web Services (AWS) .....	425
Au-Zone Technologies .....	606
Codeplay .....	612
Deci .....	324
Deeplite .....	507
Edge Impulse .....	407
Hasty.ai .....	624
Network Optix.....	318
Nota AI .....	418
Superb AI .....	622
Unikie.....	211
Voxel51 .....	711

## Distributors

Arrow Electronics .....	618
Avnet.....	306

## Cameras, Camera Modules, Lenses and Sensors

Arduino .....	422
Basler .....	604
D3 Engineering .....	608
e-con Systems.....	607
eYs3D Microelectronics.....	802
EYES .....	804
FRAMOS.....	609
iENSO.....	308
Immervision.....	800
Inuitive .....	812
Leopard Imaging.....	709
Luxonis .....	619
Oculi .....	710
Opteran Technologies .....	705
STMicroelectronics.....	213
Sunex.....	704
Vision Components.....	417

## Industry Alliances and Research Institutions

BusinessOulu .....	211
Edge AI and Vision Alliance...	311
ETRI .....	520
Khronos Group.....	525

## Software and Algorithms

Algolux.....	613
DeGirum.....	621
Hummingbirds AI .....	712
Immervision.....	800
Network Optix.....	318
Nota AI .....	418
Opteran Technologies .....	705
Plumerai .....	625
Qlairvoyance .....	708
Sequitur Labs .....	523
Silo AI.....	211
Unikie.....	211
Visidon .....	211
Visionary.ai .....	420
Xailient.....	707

2022 women in  
**VISION**  
RECEPTION

TODAY, 6:30 pm - 7:30 pm  
Expo Hall ET-1

SPONSORED BY  Perceive™

HOSTED BY



edge ai + vision  
**ALLIANCE™**

# Deep Dive Day Sessions - Thursday



**Develop and Deploy Advanced Edge Computer Vision — Fast!**

**9:00 am - 12:00 pm**



**Optimize AI Performance and Power for Tomorrow's Neural Network Applications**

**12:00 - 3:00 pm**



**Intel AI Developer Expo — Let's Build Something Wonderful Together**

**Session**  
**3:00 - 5:30 pm**

**Reception**  
**5:30 - 7:30 pm**

**Visit the Registration desk to reserve your seat!**

# Download Our App and Get the Full Summit Agenda on Your Phone!



Create a personal agenda of events, find demos and exhibitors in the Expo Hall and stay up to date on the latest Summit news through our new mobile app.



## It's as easy as

### 1. Download the app

For either iPhone or Android, scan the QR code with your phone.

### 2. Search your email

Look for an email from [noreply@mg.gripcontact.com](mailto:noreply@mg.gripcontact.com) which will have your unique login details

### 3. If you cannot find the email

Open the app and enter the email address with which you registered for the Summit and the confirmation number you received from [registration@edge-ai-vision.com](mailto:registration@edge-ai-vision.com) to set up your account

### QR code not working?

Visit [uqr.to/2022summit](http://uqr.to/2022summit) or search for Embedded Vision Summit in the App Store or the Play Store.





## Please fill out your Embedded Vision Summit survey!

Completed surveys will be entered into a drawing for one of three \$100 Amazon gift cards.





## Event-based Neuromorphic Perception and Computation: The Future of Sensing and AI

### **Ryad Benosman**

Professor, University of Pittsburgh Medical Center,  
Carnegie Mellon University and  
Sorbonne Universit as



## Event-based Neuromorphic Perception and Computation: The Future of Sensing and AI

### **Ryad Benosman**

Professor, University of Pittsburgh Medical Center,  
Carnegie Mellon University and  
Sorbonne Universit s



# Tuesday Schedule



9:00 - 11:10 am

**INTRODUCTION: A View from the Summit (Part 1)** – Jeff Bier  
**KEYNOTE: Event-Based Neuromorphic Perception and Computation: The Future of Sensing and AI** – Ryad Benosman  
**GENERAL SESSION: How Do We Enable Edge ML Everywhere? Data, Reliability and Silicon Flexibility** – Zach Shelby

11:10 - 11:25 am **Break**

11:25 - 12:30 pm

Technical Insights I	Technical Insights II	Fundamentals	Business Insights
----------------------	-----------------------	--------------	-------------------

12:30 - 1:30 pm **Lunch - Expo Hall**

1:30 - 3:10 pm

				Enabling Technologies I	Enabling Technologies II	Enabling Technologies III
--	--	--	--	-------------------------	--------------------------	---------------------------

12:30 - 8:00 pm  
**Technology Exhibits**  
 Expo Hall

3:10 - 4:15 pm **Break**

4:15 - 5:55 pm

--	--	--	--	--	--	--

6:00 - 8:00 pm

**6:00 - 8:00 pm Technology Exhibits Reception**  
 Expo Hall

**6:00 - 6:30 pm Edge AI and Vision Product of the Year Awards** Expo Hall ET-3

**6:30 - 7:30 pm Women in Vision Reception**  
 Expo Hall ET-1