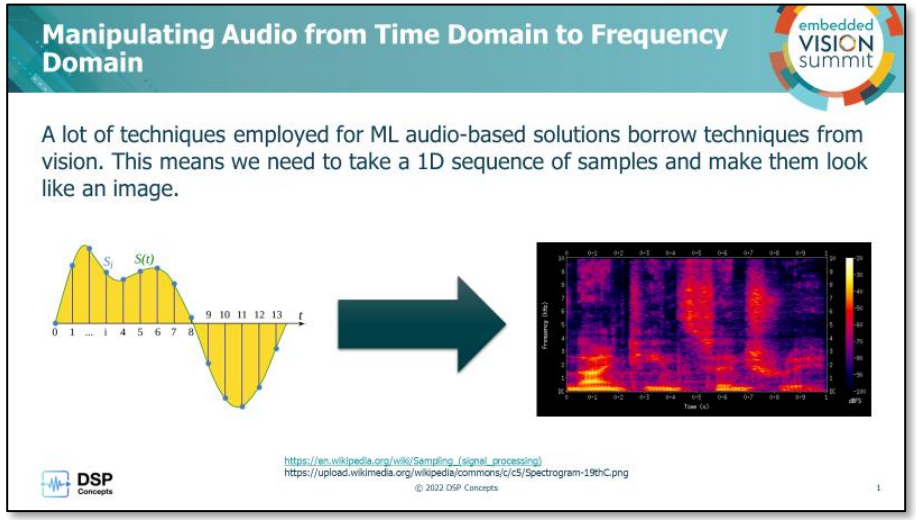
A View from the Summit (Part 2)

Jeff Bier
Founder, Edge AI and Vision Alliance
President, BDTI
May 18, 2022

What I Learned Yesterday



Josh Morris, DSP Concepts

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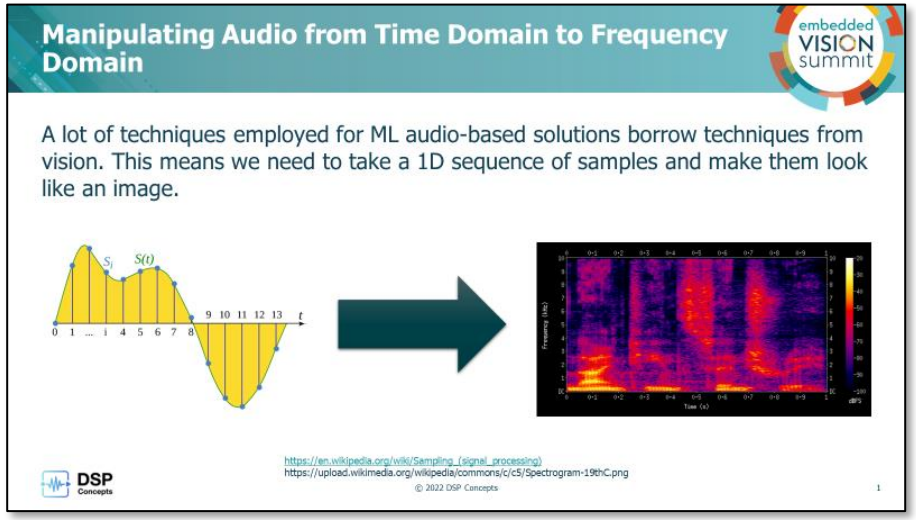

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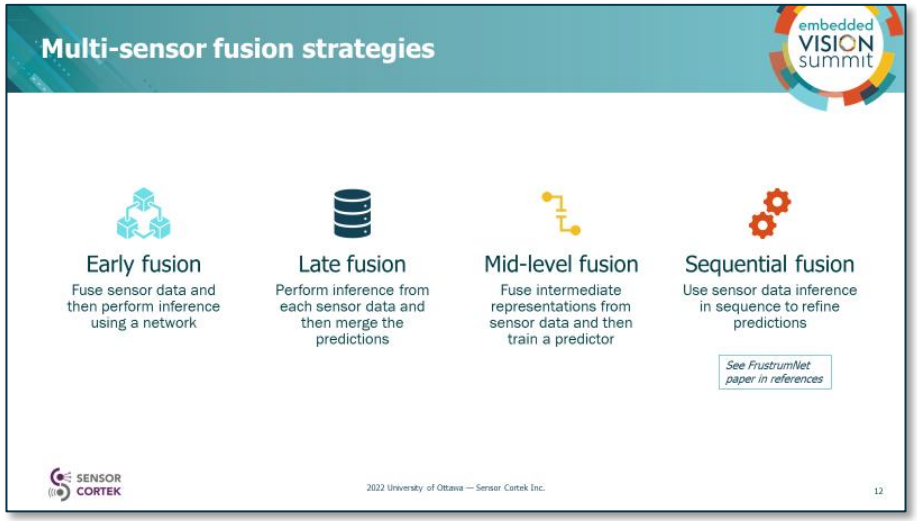

Robert Laganiere, Sensor Corek

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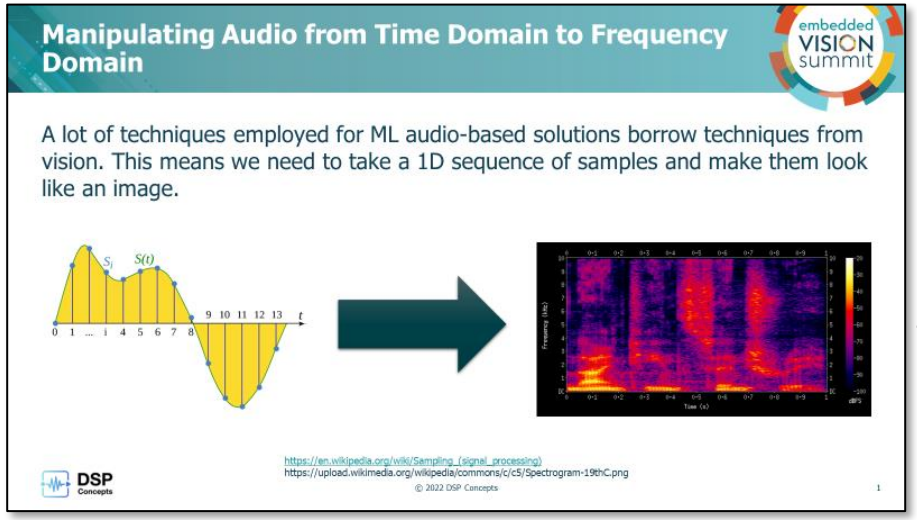

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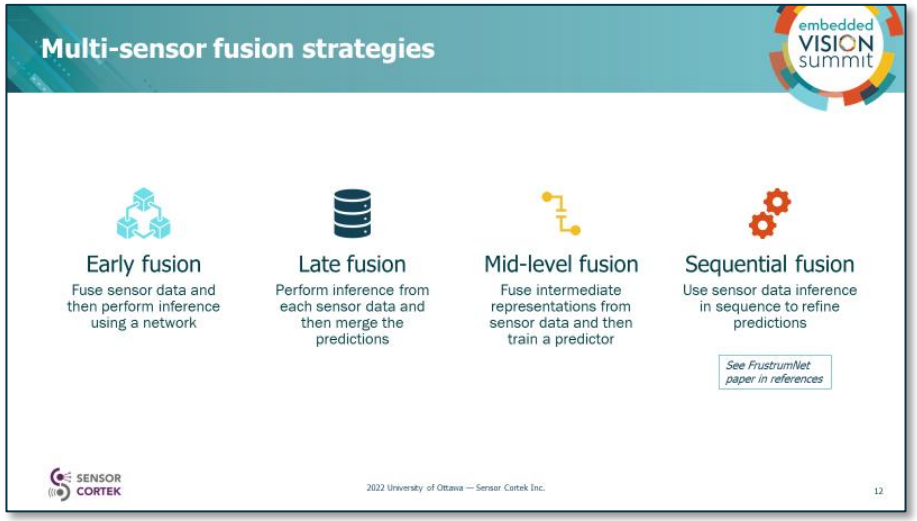

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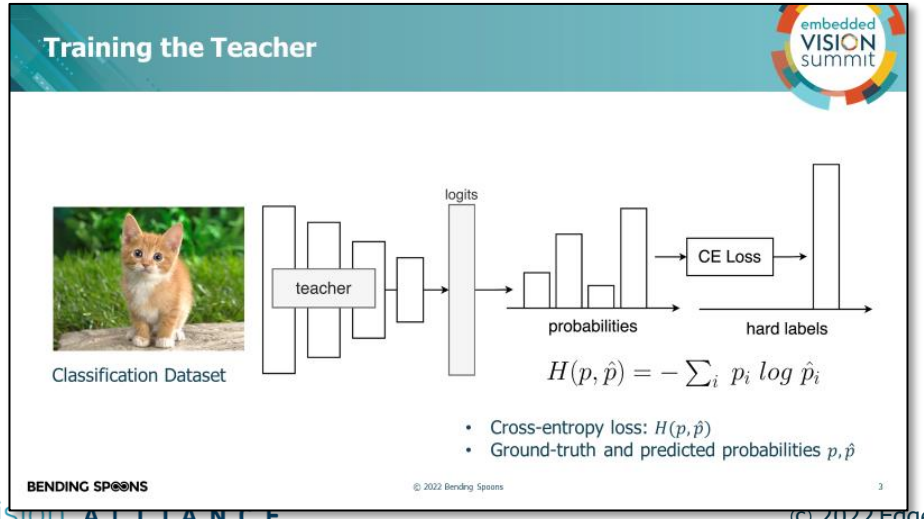

Federicao Perzzi, Bending Spoons

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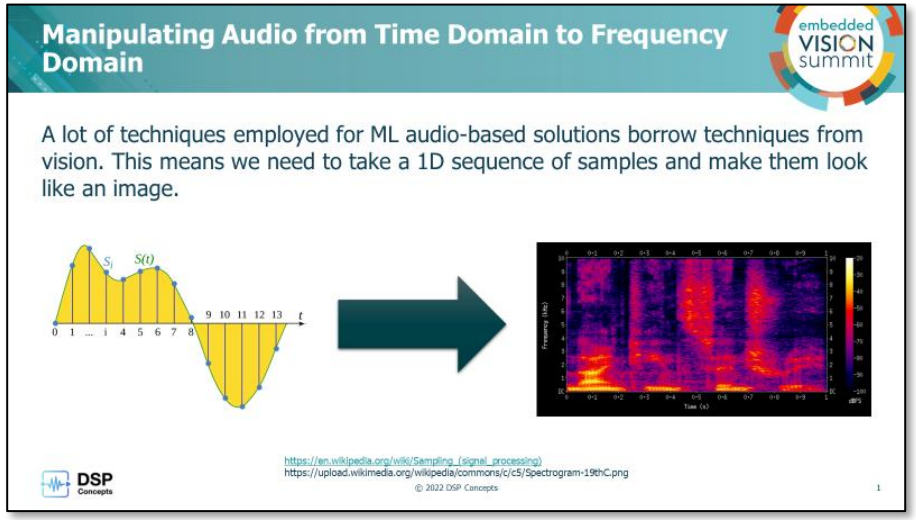

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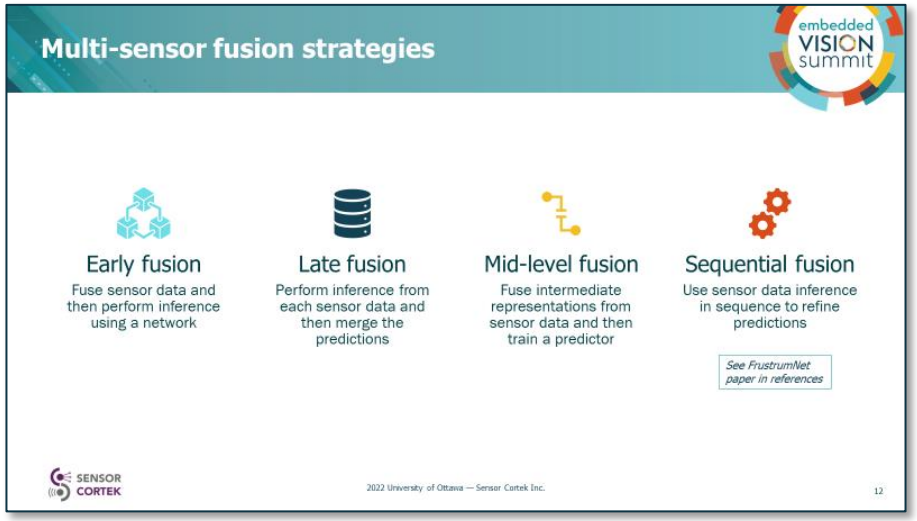

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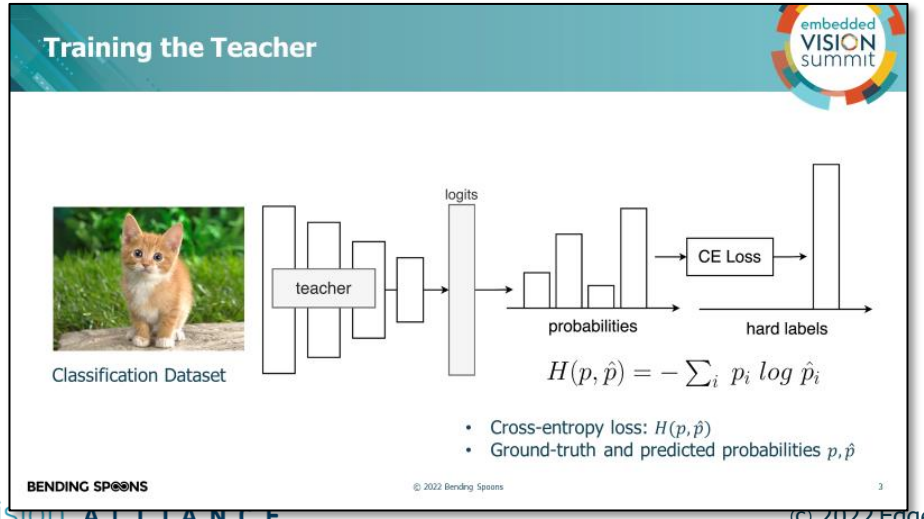

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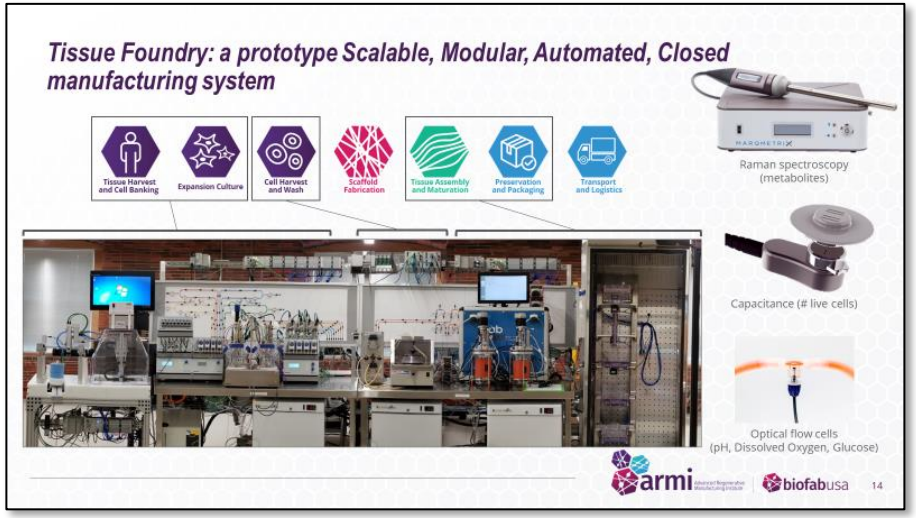


Dean Kamen

Opportunities: Smart Spaces

Almost Any Space Can Be a Smart Space

Consumer

Homes

Apartments

Condominiums

Front yards

Back yards

Storage

Commercial

Retail

Industrial

Offices

Agriculture

Healthcare

Government/Municipal

Highways, roadways

Ports, airports

Recycling, waste processing

Schools, campuses

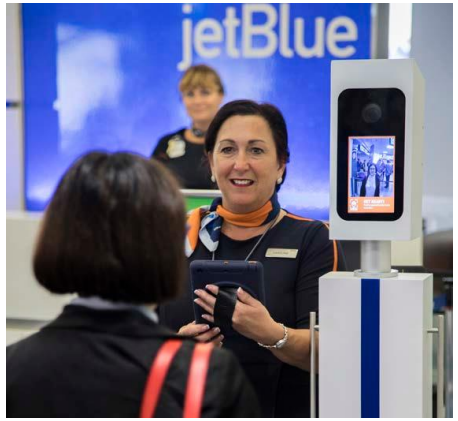
Public transit

Street and garage parking

Parks

Smart Space Applications Have Blossomed

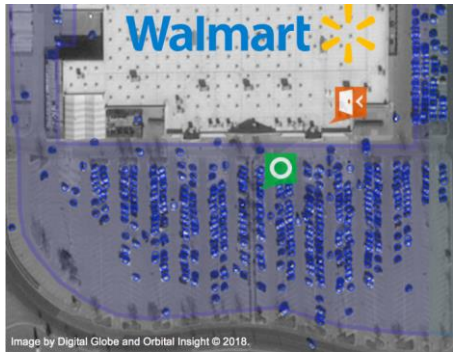
Source: Petcube



Source: cpb.gov

Source: Compology

Source: Ringdoorbell.eu



Source: Orbital Insight

Source: Identified Technologies

Source: Amazon

Source: Hortdaily.com

Benefits of Smart Spaces

Smart Spaces deliver three big potential benefits:

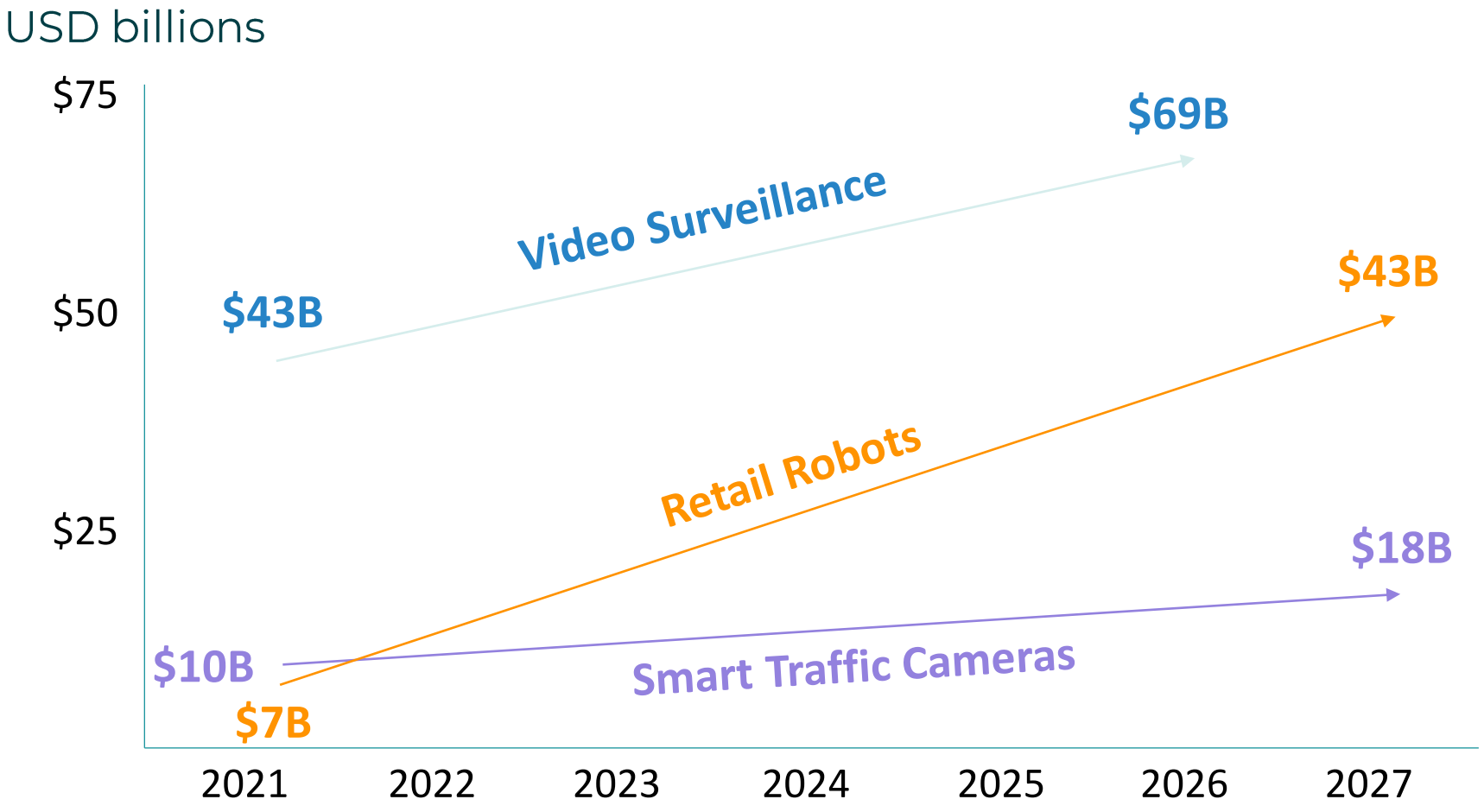
User experience (e.g., increases comfort or convenience)

Economics (e.g., boosts efficiency or reduces cost)

Safety/risk (makes a place safer or less risky)

Smart Spaces Success Story: Cubic GRIDSMART

The Smart Spaces Market Is Big … and Growing



Smart Spaces broadly encompasses many markets … many of which are large in their own right!

Sources: Markets and Markets, KBV Research, Coherent Market Research, Grand View Research; Alliance estimates

Key Technologies for Smart Spaces

- **Sensors**
  - Image/video
  - Audio
  - Optical depth
  - RF (e.g., tracking via phones)
  - Radar
  - Air quality
  - Vibration
- **Processing**
  - Edge processors
  - Cloud computing services
- **Connectivity**
  - Wireless communications
- **Algorithms**
  - Signal conditioning
    - E.g., high dynamic range imaging
  - Perception
    - E.g., audio and visual AI, tracking, intent prediction, …
  - Privacy preservation
    - E.g., face blurring
  - Sensor fusion
- **Frameworks and tools**
  - DevOps
  - Monitoring, updates
- **Security**

Key Challenges in Smart Spaces

- Lack of expertise
- Training data
- Cost of deployment
- Fragmentation / long tail
- Accuracy in diverse and challenging environments
- Reliability
- Sensor fusion
- Aggregation of data and/or analytics from distributed devices
- Edge-cloud processing trade-offs
- Managing large distributed systems
- Privacy
- Others?

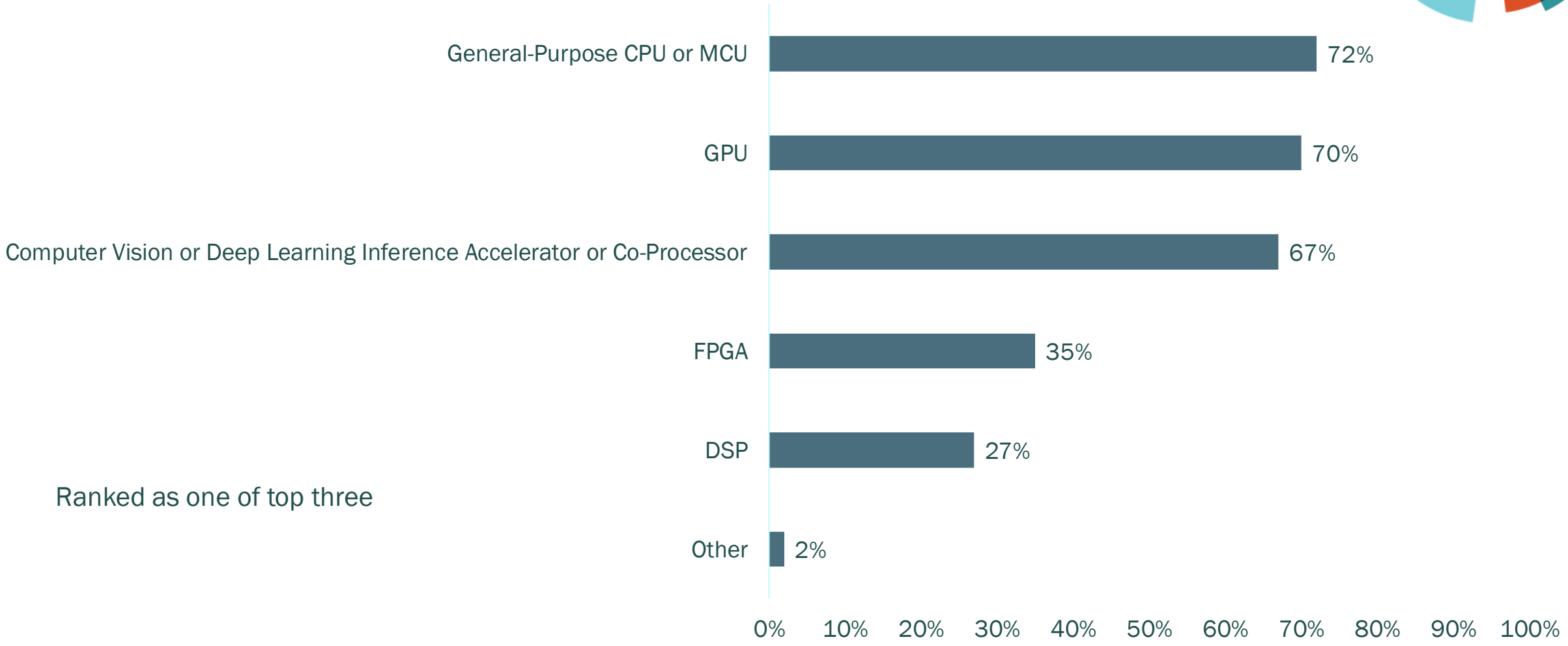
Observation: Privacy

- Smart Spaces offer a potential future of improved user experience, economics, and safety
- They also offer a potential future of ubiquitous surveillance
- Regulation on various aspects of Smart Spaces (such as facial recognition) is here, and growing
- A "privacy first" approach to Smart Spaces will be important

Maine passes the strongest state facial recognition ban yet

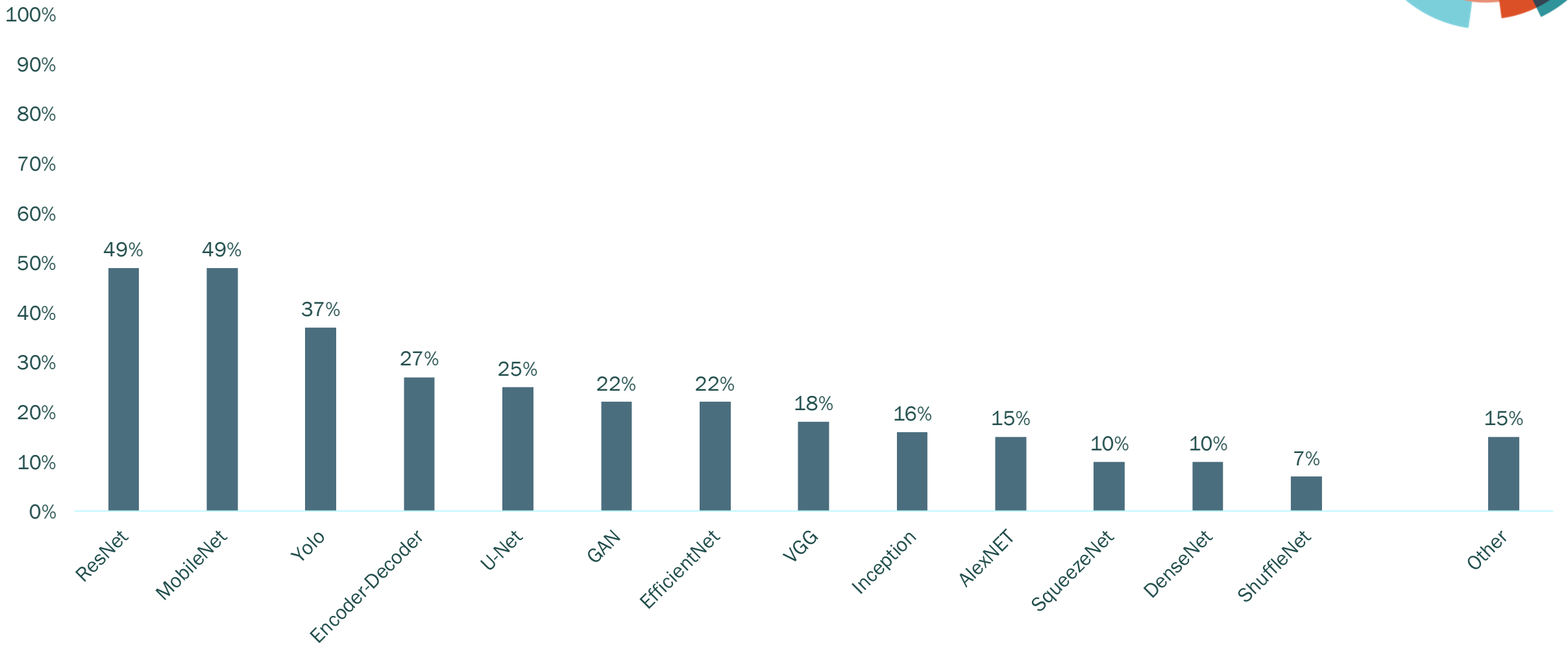
European Parliament backs ban on remote biometric surveillance

Type of Processor Used for Deployment of Vision Tasks



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

DNN Topology



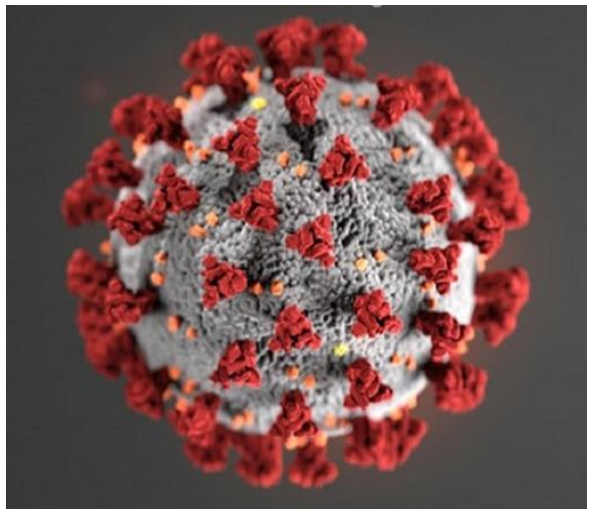
Source: Edge AI and Vision Alliance, *Computer Vision Developer Survey, November 2021*

FIRST Robotics Competition

FIRST Robotics Competition Honorees

Making the Most of Your Day

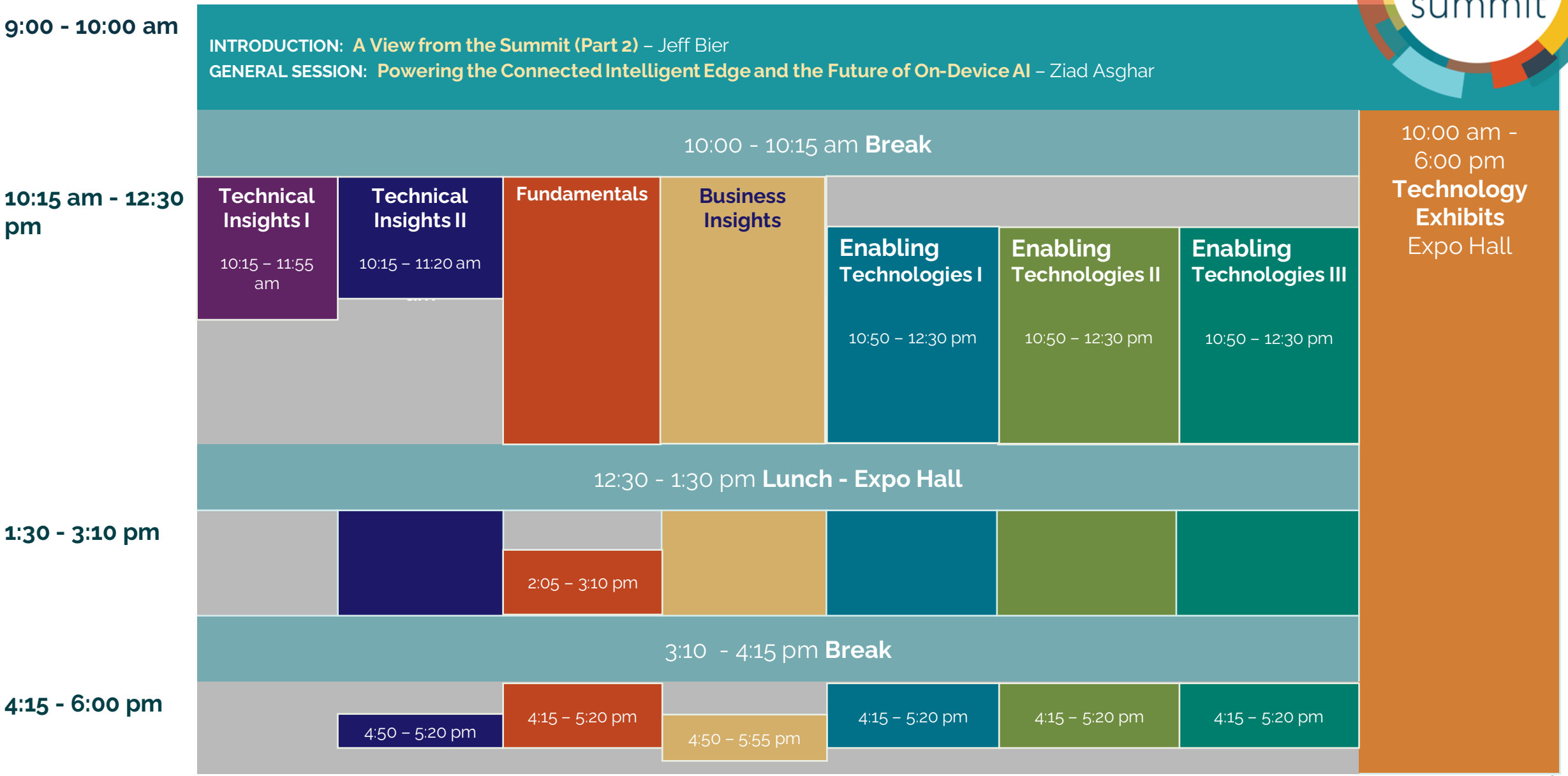
Let's Be Safe



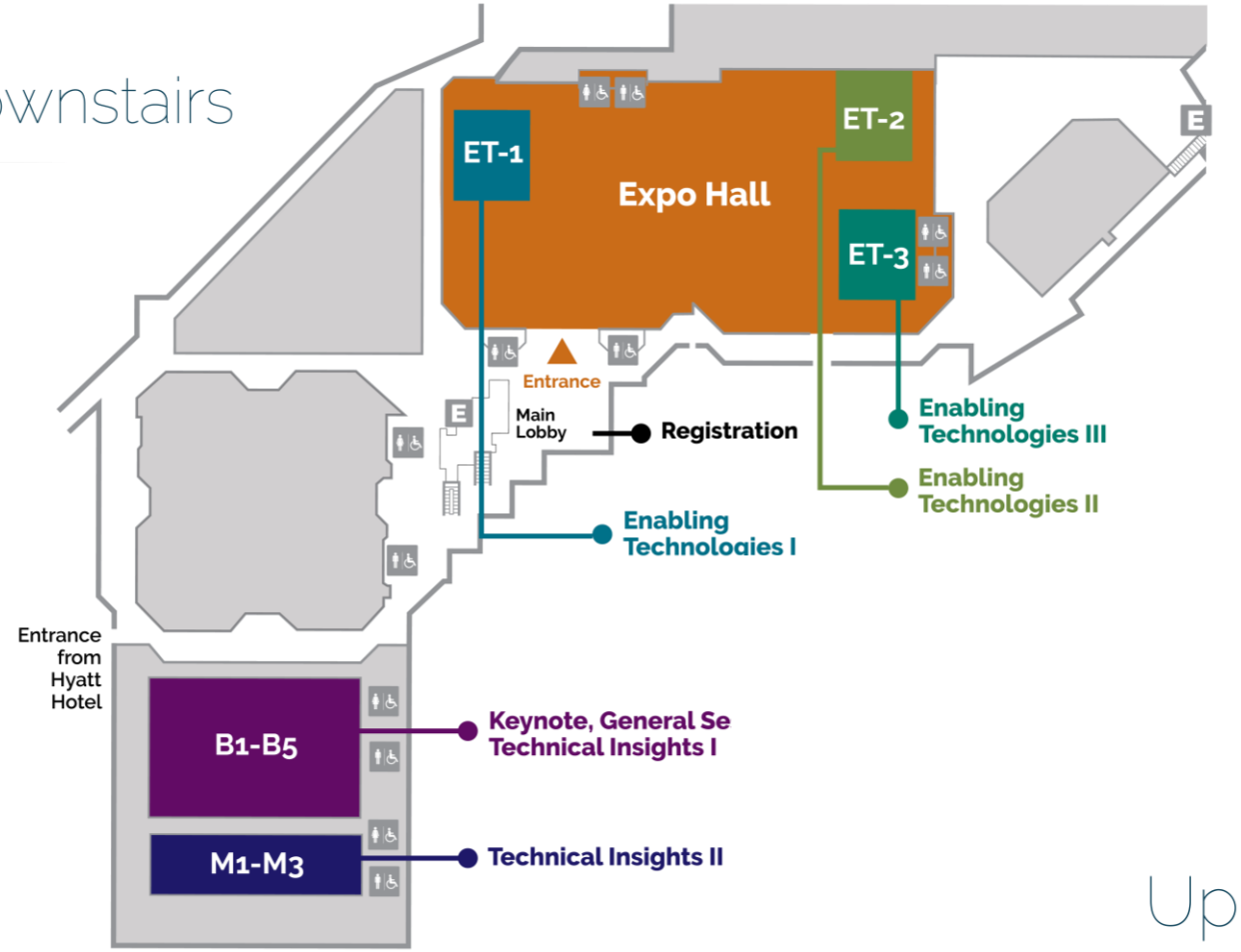
Lohp.Berkeley.edu

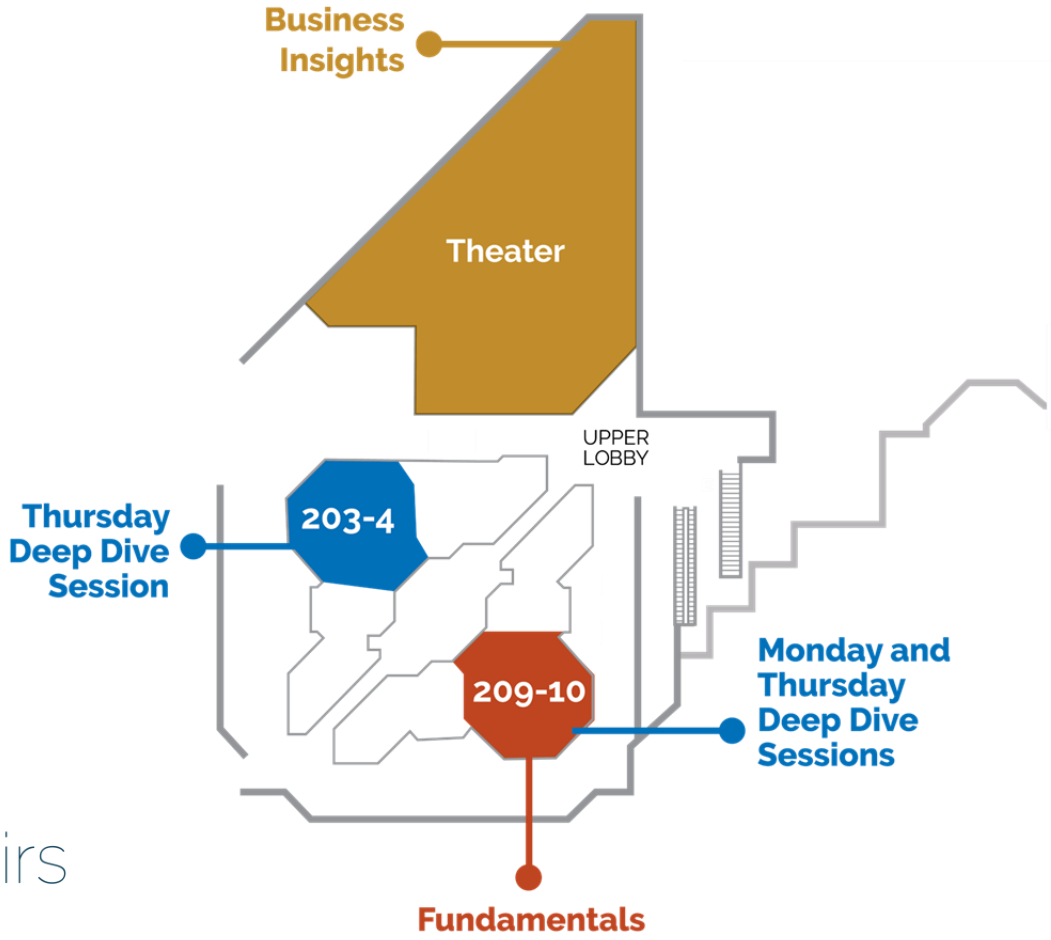
USDA

Wednesday Schedule



Facility Map





Check Out the Exhibits!

AI BLOX
AIM FUTURE
algolux
ALPHA ICs
ADVANCING AI COMPUTE
aws
AMD
ARDUINO PRO
arm
ARROW
Au-Zone Technologies Inc.
AVNET
BASLER
BDTi
blaize
brainchip
Essential AI
OULU
cadence
CEVA
codeplay
Coherent Logix
D3 Engineering
deci
Deeplite
DEEPX
DeGirum
e-con Systems
Your Product Development Partner
edge ai + vision ALLIANCE
EDGE IMPULSE
EFINIX
ETRI
Electronics and Telecommunications Research Institute
expedera
eYS3D Microelectronics
EYYES
flexlogix
AI + eFPGA
FRAMOS
HAILO
Hasty
HUMMINGBIRDS AI
iENSO
Imagination
IMMERVISION
see more, smarter
intel
INUITIVE
KHRONOS GROUP
Lanner
LATTICE SEMICONDUCTOR
Leopard Imaging
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NVIDIA
oculi
OPENEDGES
Technology, Inc.
openfive
Opteran
Perceive
Plumerai
QLAIRVOYANCE
quadric
RENESAS
Roviero
SEQUITUR LABS
SILO.AI
life.augmented
Sunex
Superb AI
synaptics
SYNOPSYS
TEMPO ANALYTICS
UNIKIE
visidon
vision components
VISIONARY.AI
VOXEL51
xailient
AMD XILINX
XMOS

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!

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2022 embedded VISION summit

Thank You!

General Session Presentation

Powering the Connected Intelligent Edge and the Future of On-Device AI

Ziad Asghar
Vice President of Product Management
Qualcomm Technologies Inc.

General Session Presentation

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Wednesday Schedule