



# Forward-Looking Statements

This presentation contains forward-looking statements, including with respect to Intel’s business plans and strategy, process and product roadmaps, and current and future technologies, as well as the anticipated benefits therefrom. Such statements involve many risks and uncertainties that could cause our actual results to differ materially from those expressed or implied, including: changes in demand for our products; changes in product mix; the complexity and fixed cost nature of our manufacturing operations; the high level of competition and rapid technological change in our industry; the significant upfront investments in R&D and our business, products, technologies, and manufacturing capabilities; vulnerability to new product development and manufacturing-related risks, including product defects or errata, particularly as we develop next generation products and implement next generation process technologies; risks associated with a highly complex global supply chain, including from disruptions, delays, trade tensions, or shortages; sales-related risks, including customer concentration and the use of distributors and other third parties; potential security vulnerabilities in our products; cybersecurity and privacy risks; investment and transaction risk; intellectual property risks and risks associated with litigation and regulatory proceedings; evolving regulatory and legal requirements across many jurisdictions; geopolitical and international trade conditions; our debt obligations; risks of large scale global operations; macroeconomic conditions; impacts of the COVID 19 or similar such pandemic; and other risks and uncertainties described in our earnings release dated July 27, 2023, our most recent Annual Report on Form 10-K and our other filings with the U.S. Securities and Exchange Commission. All information in this presentation reflects Intel management views as of the date hereof unless an earlier date is specified. Intel does not undertake, and expressly disclaims any duty, to update such statements, whether as a result of new information, new developments, or otherwise, except to the extent that disclosure may be required by law. Product, service and technology performance varies by use, configuration and other factors. Reference to research results, including comparisons to products, services or technology performance are estimates and do not imply availability. The products and services described may contain defects or errors which may cause deviation from published specifications.



It  
Starts  
Here

intel.  
innovation

Pat Gelsinger  
Intel CEO

It  
Starts  
Here



The background features a dark blue digital environment. On the right, a laptop is visible with its screen displaying a grid of data. To the left, a large, glowing blue cloud icon is connected to a series of vertical data streams. In the center, there are various glowing icons, including a cloud, a server rack, and a network diagram. The overall aesthetic is high-tech and futuristic, with a color palette dominated by blues, purples, and reds.

# Bringing AI Everywhere

from client and edge  
to the network and cloud



# ai.io

## Rich Felton-Thomas

Director of Sports Science  
& Chief Operating Officer, ai.io



Balance  
89.9°

Distance  
14.6<sup>M</sup>

30m Sprint  
4.18<sup>S</sup>

Reactions  
397<sup>MS</sup>

Fatigue  
88%

Agility  
760<sup>MS</sup>

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# ai.io

+

# intel®



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# ai.io

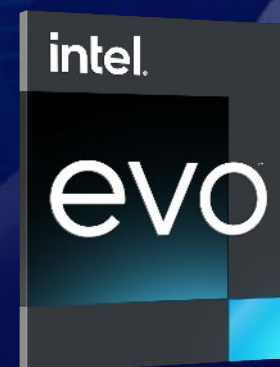
## Intel technology powers every touchpoint across the ai.io experience



Xeon  
Cloud  
Computing



Core i9  
Desktop, Laptop &  
Tablet



PC Compute  
Connected  
Devices



Networking  
End-to-end  
Optimization



AI Models  
Optimized on  
OpenVINO



Intel 3D AI  
Trained with  
Intel® Gaudi

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# ai.io



Scan to learn more



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**\$574B**

Silicon Industry

powering

**\$8 Trillion**

Global Tech Economy

intel innovation





# Siliconomy

*noun:*

An evolving economy enabled by the magic of silicon where semiconductors are essential to maintaining and enabling modern economies.



# Siliconomy

4x

Increase  
in connected devices  
over past 5 years

15x

Growth  
in connected devices  
in 10 years

Base: 641 security decision-makers at consumer electronic device organizations  
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, December 2022





**intel**<sup>®</sup>  
Developer Cloud  
[cloud.intel.com](https://cloud.intel.com)  
access to our latest  
accelerated hardware and software

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Build and test for  
best performance  
efficiency



Advanced AI  
capabilities  
toolkits



Multiplatform  
systems and  
clusters



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Developer Cloud  
[cloud.intel.com](https://cloud.intel.com)

Available to all



cloud.intel.com

# Intel-optimized AI Software

supported by the latest  
CPUs, NPUs and GPUs

**1 week free**

of Intel Developer Cloud access  
for every in-person attendee

it  
Starts  
Here

```
import webbrowser as siliconomy
```

```
accessibleDevelopment = "https://cloud.intel.com"
```

```
devNeeds = {"Open": True, "Choice": True,  
            "Trust": True, "AI": True,  
            "Client": True, "Edge": True,  
            "Cloud": True }
```

```
if any(x is True for x in devNeeds.values()):  
    siliconomy.open(accessibleDevelopment)
```



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FUEL YOUR FIRE



Artificial  
Intelligence



Next Generation  
Systems



Platforms  
and Edge  
to Cloud

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## DEEP RENDER

Solving too much data  
and too little bandwidth problem  
using Intel Developer Cloud

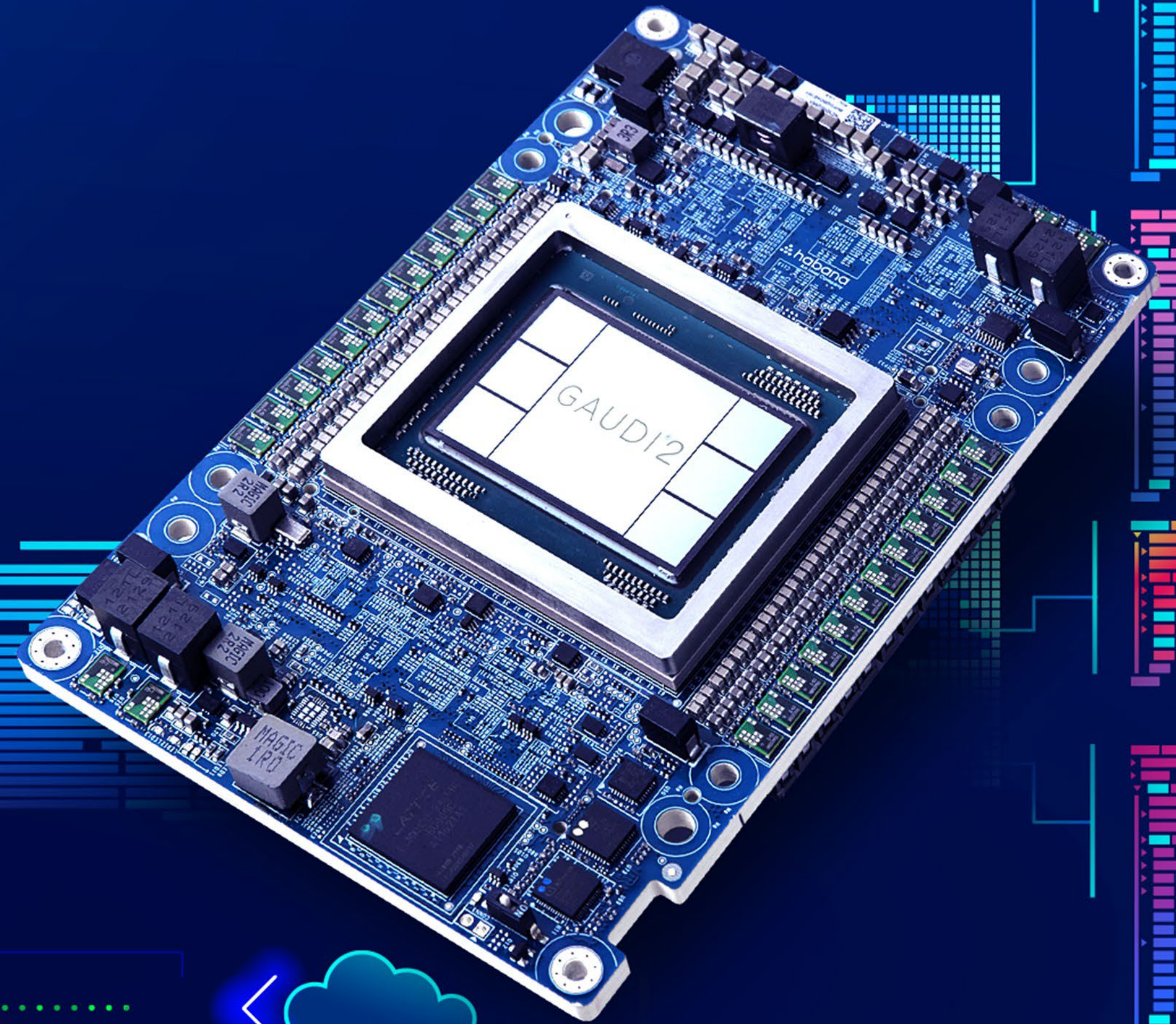
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# intel GAUDI

## Commitment to address every phase of the AI continuum

Performance metrics based on MLPerf Inference v3.1 benchmark. For configuration details, see the [results published by MLCommons](#). Results may vary.



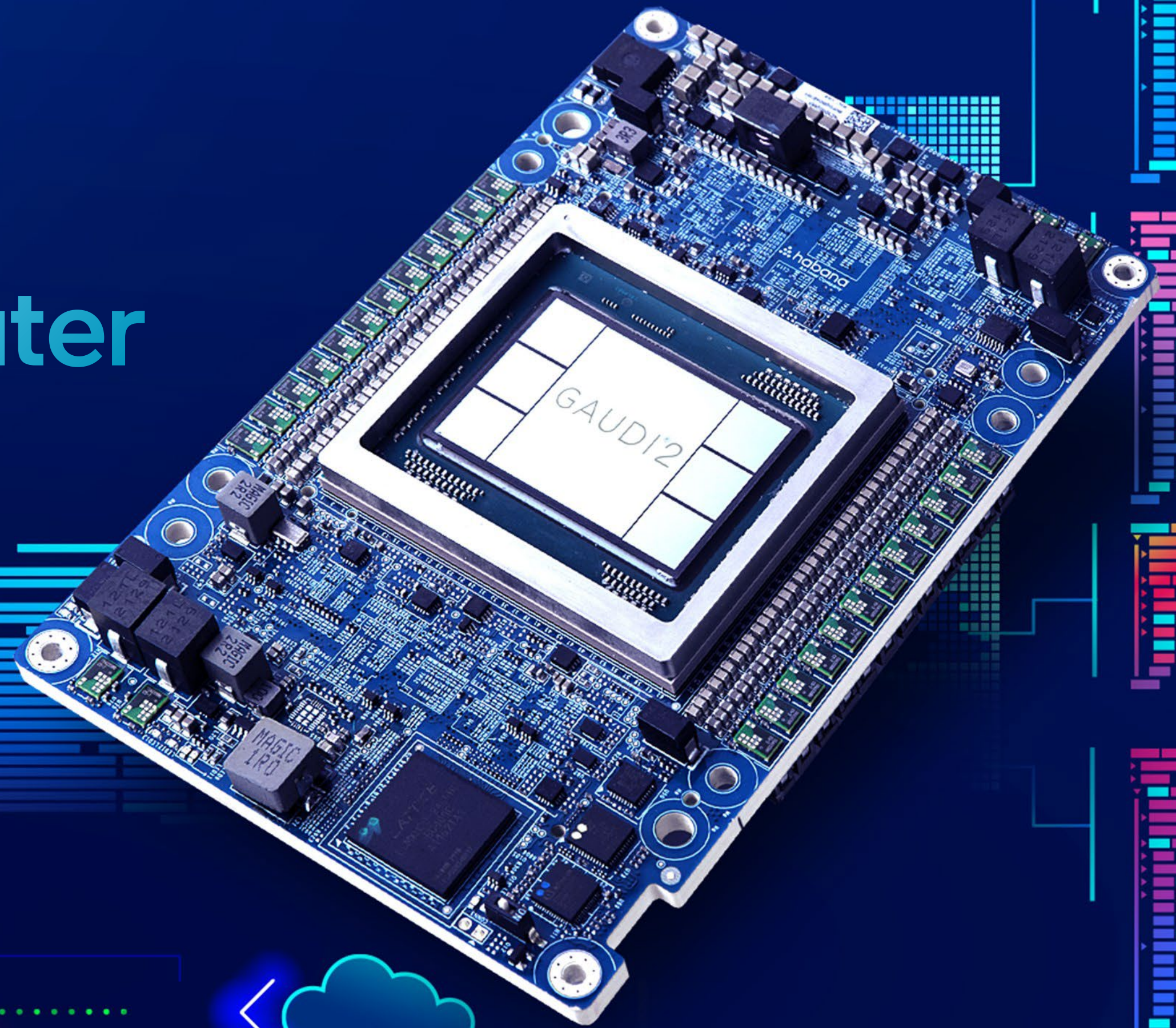
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intel GAUDI  
**stability.ai**

**Large AI Supercomputer**  
will be a top 15 in the world



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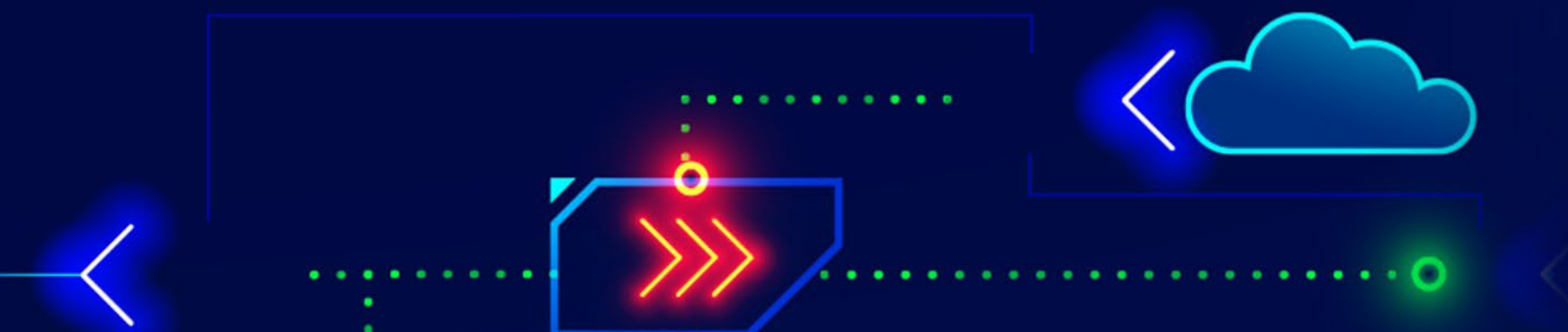
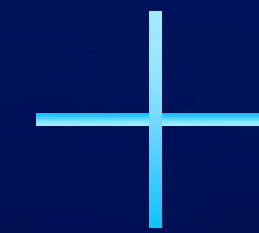




“Dell Technologies and Intel are collaborating to offer AI solutions to meet customers wherever they are on their AI journey. Combining the reliability of Dell PowerEdge servers – the industry’s top selling portfolio – with Intel technologies for general purpose and accelerated compute provides powerful systems for optimized AI. **PowerEdge systems with Xeon and Gaudi will support AI workloads ranging from large scale training to base level inferencing.** We look forward to helping customers transform their business with new applications with this powerful combination.”

**Jeff Clarke**

Vice Chairman and COO, Dell Technologies







# 4th Gen Intel® Xeon® Scalable Processor

MLPerf AI inference performance  
results: addressing every phase  
of the AI continuum

Performance metrics based on MLPerf Inference v3.1 benchmark. For configuration details,  
see the [results published by MLCommons](#). Results may vary.





  
**Alibaba.com**

+

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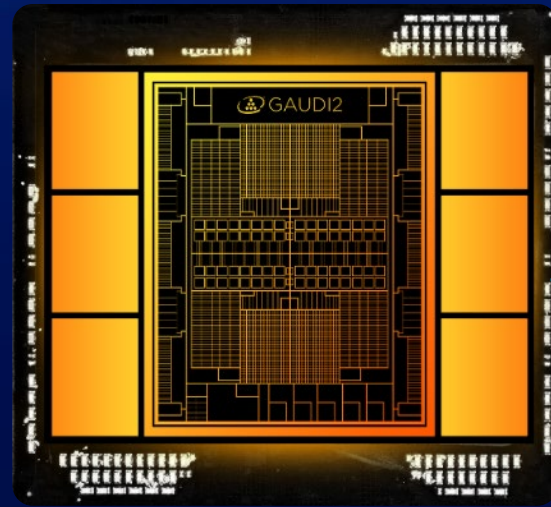
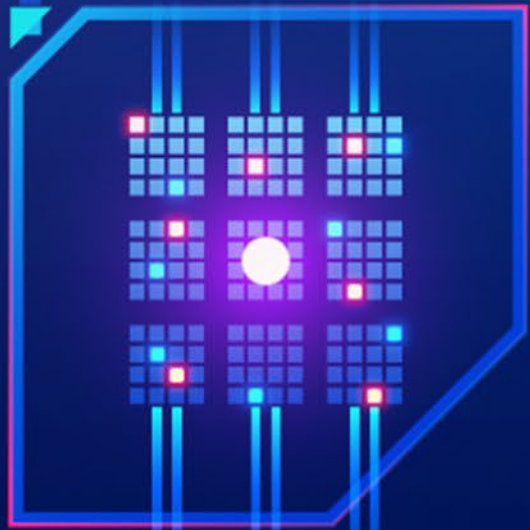
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# AI Roadmap

Bringing AI Everywhere

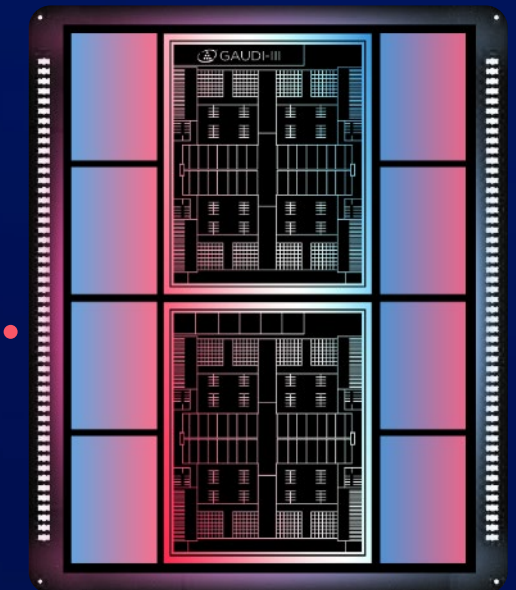


**4x**  
BF16

**2x**  
Compute

**1.5x**  
Network  
Bandwidth

**1.5x**  
HBM  
Capacity



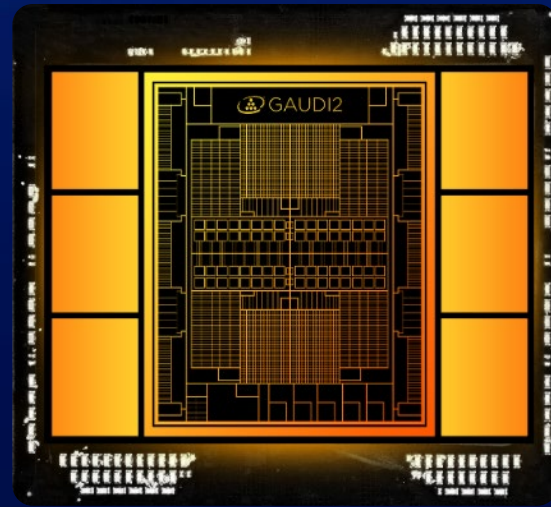
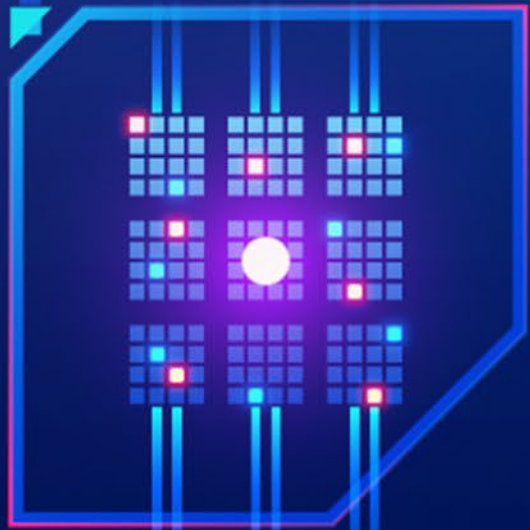
**Intel® Gaudi® 2**  
7nm

**Intel® Gaudi® 3**  
5nm

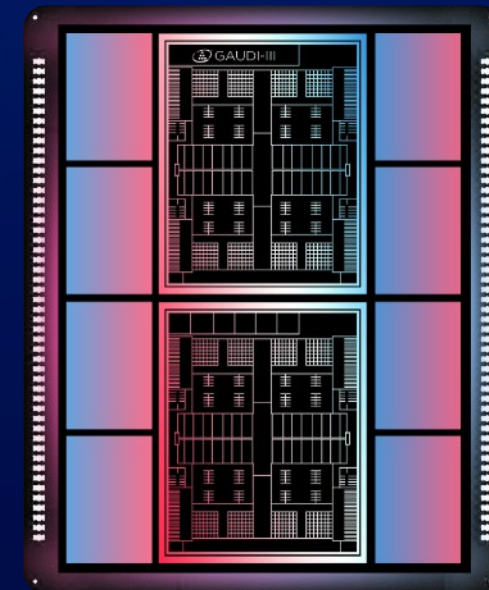


# AI Roadmap

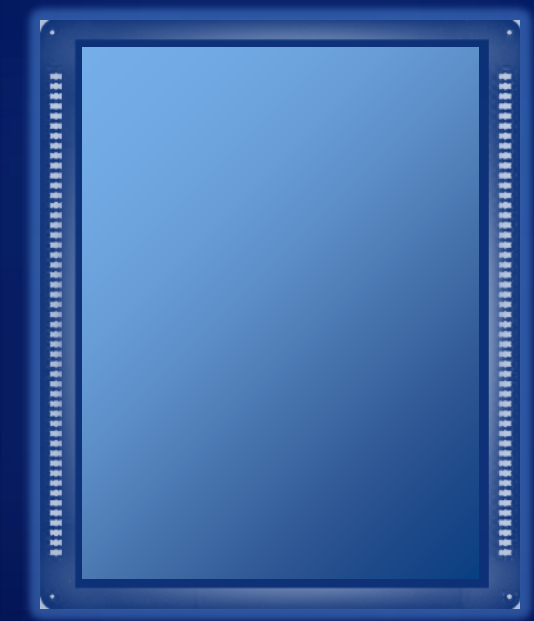
Bringing AI Everywhere



Intel® Gaudi® 2  
7nm



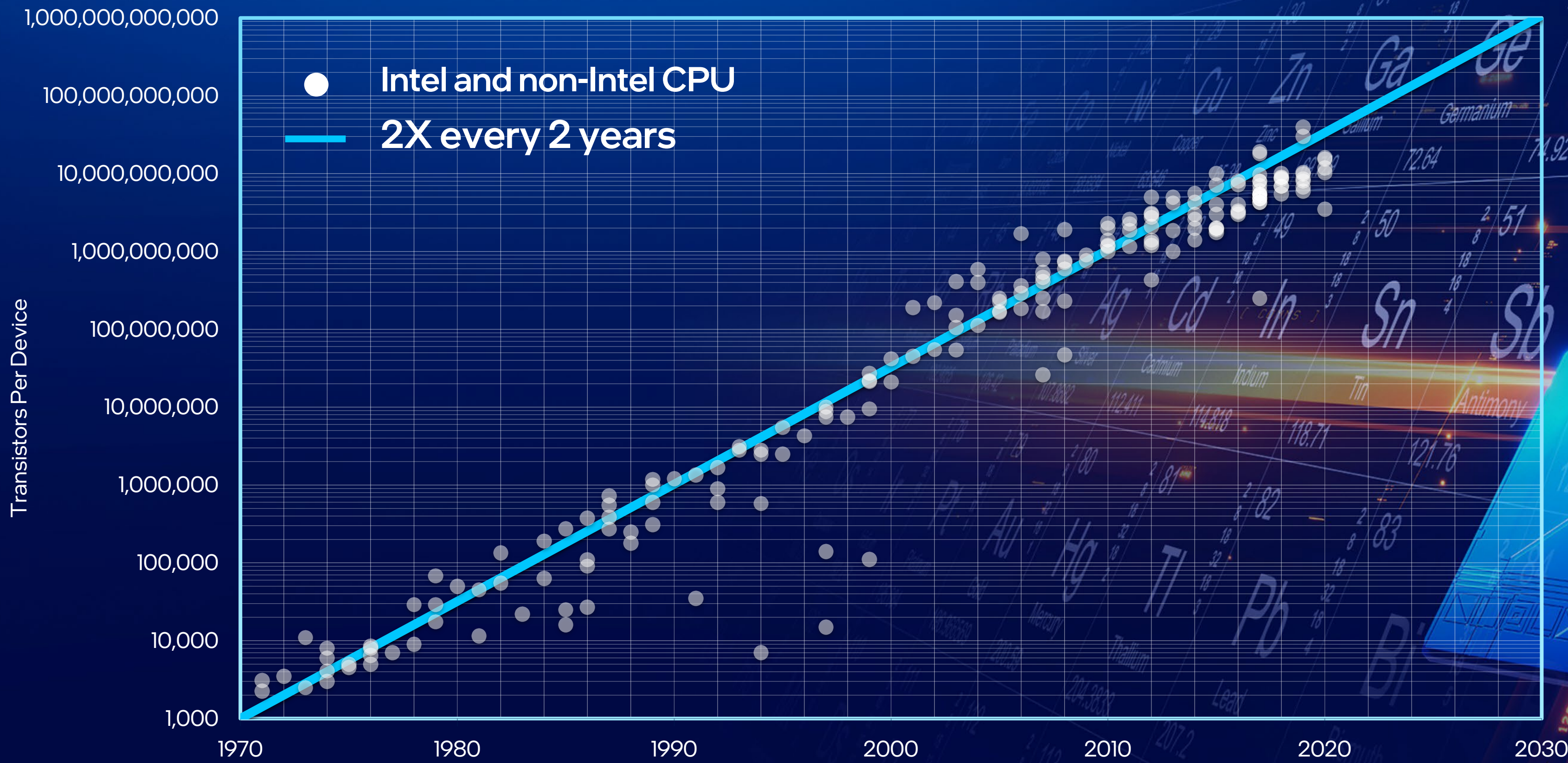
Intel® Gaudi® 3  
5nm



Falcon Shores  
Codename

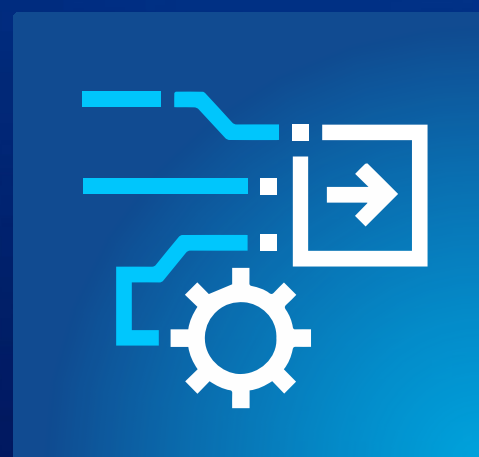


# Moore's Law is alive and well





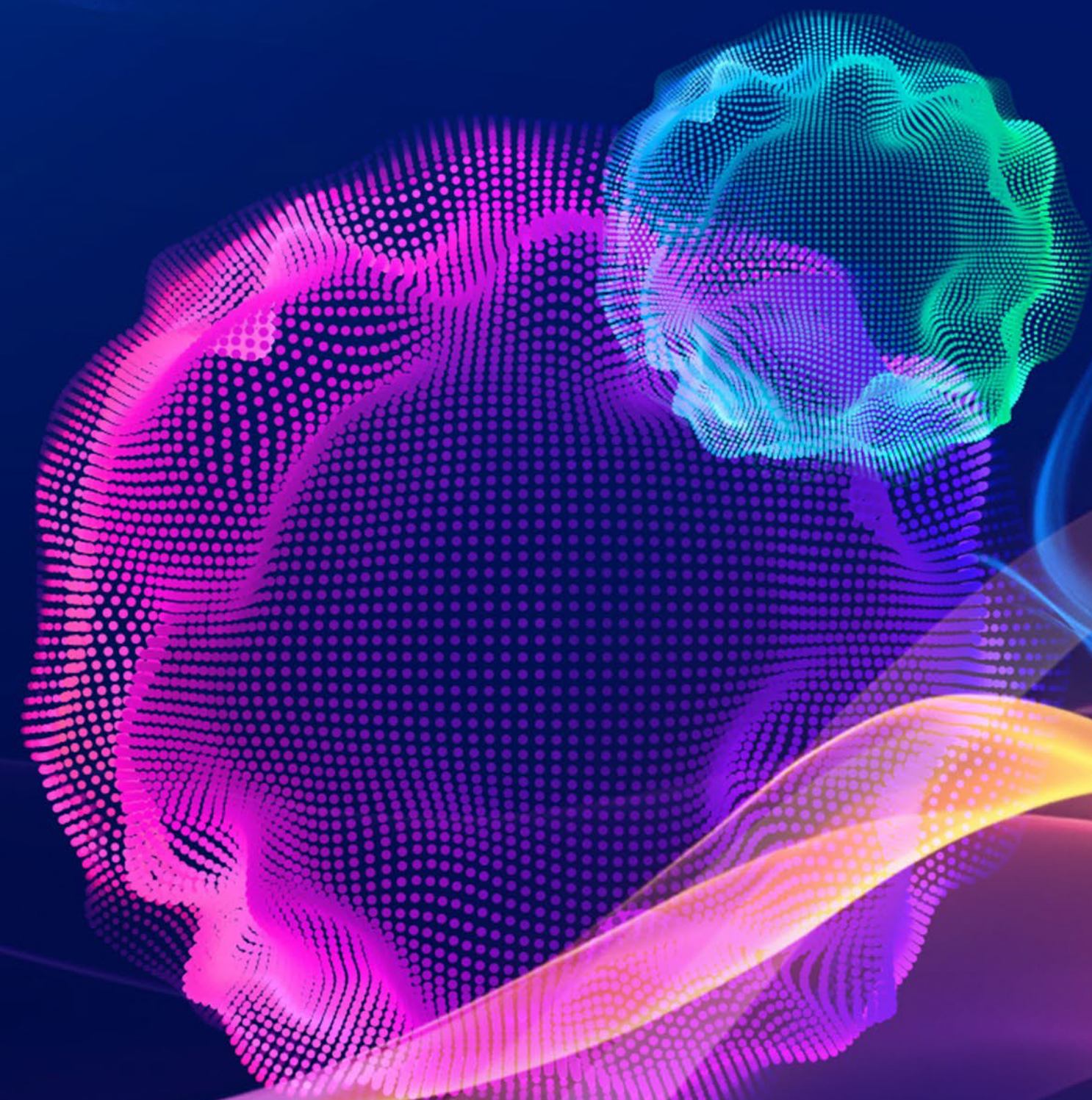
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ignite



Scala  
Biodesign

## Using computational biology & gen AI

to dramatically speed up  
protein engineering process



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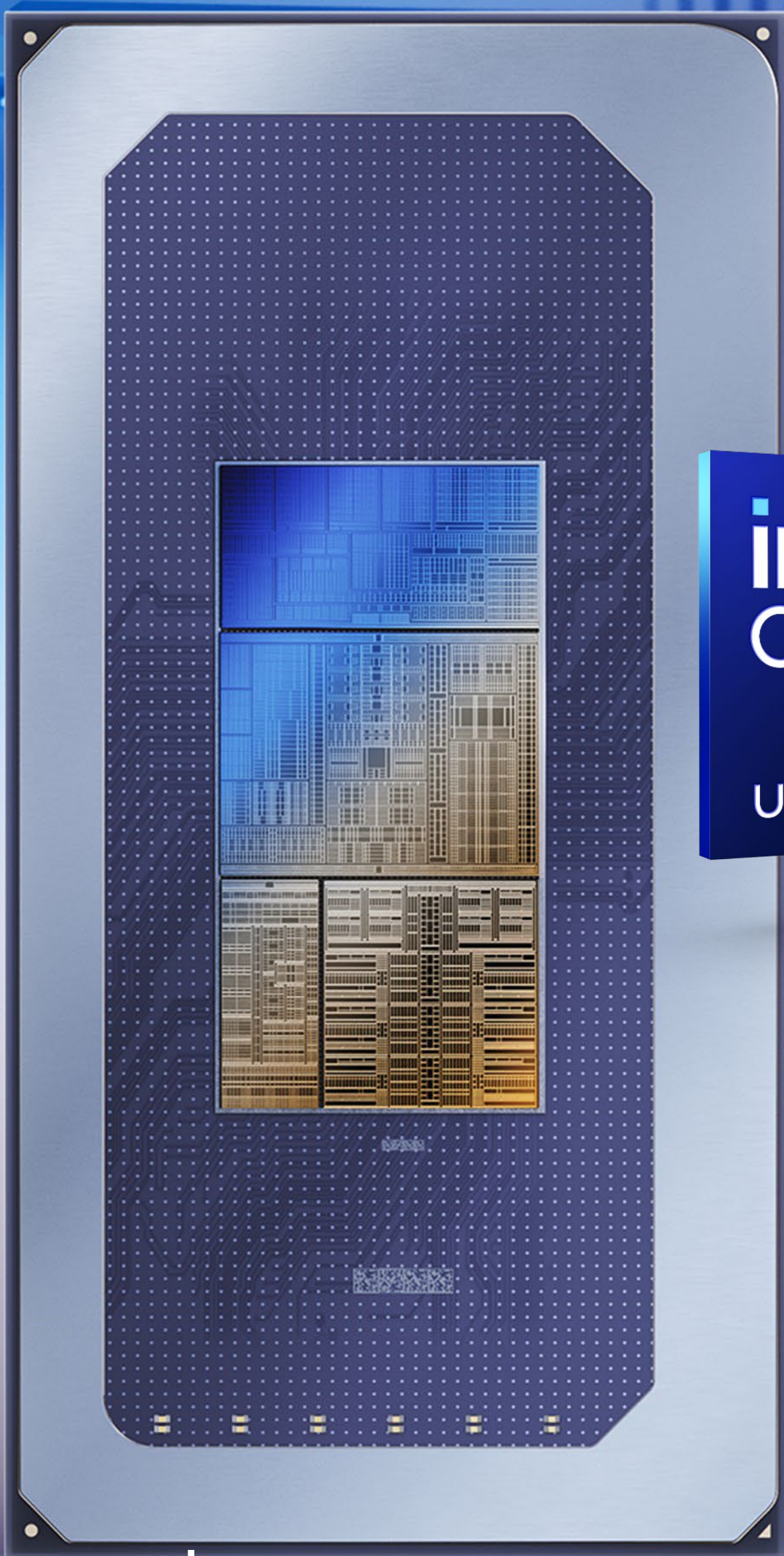




# AI PC

Fundamentally transforming  
the PC experience





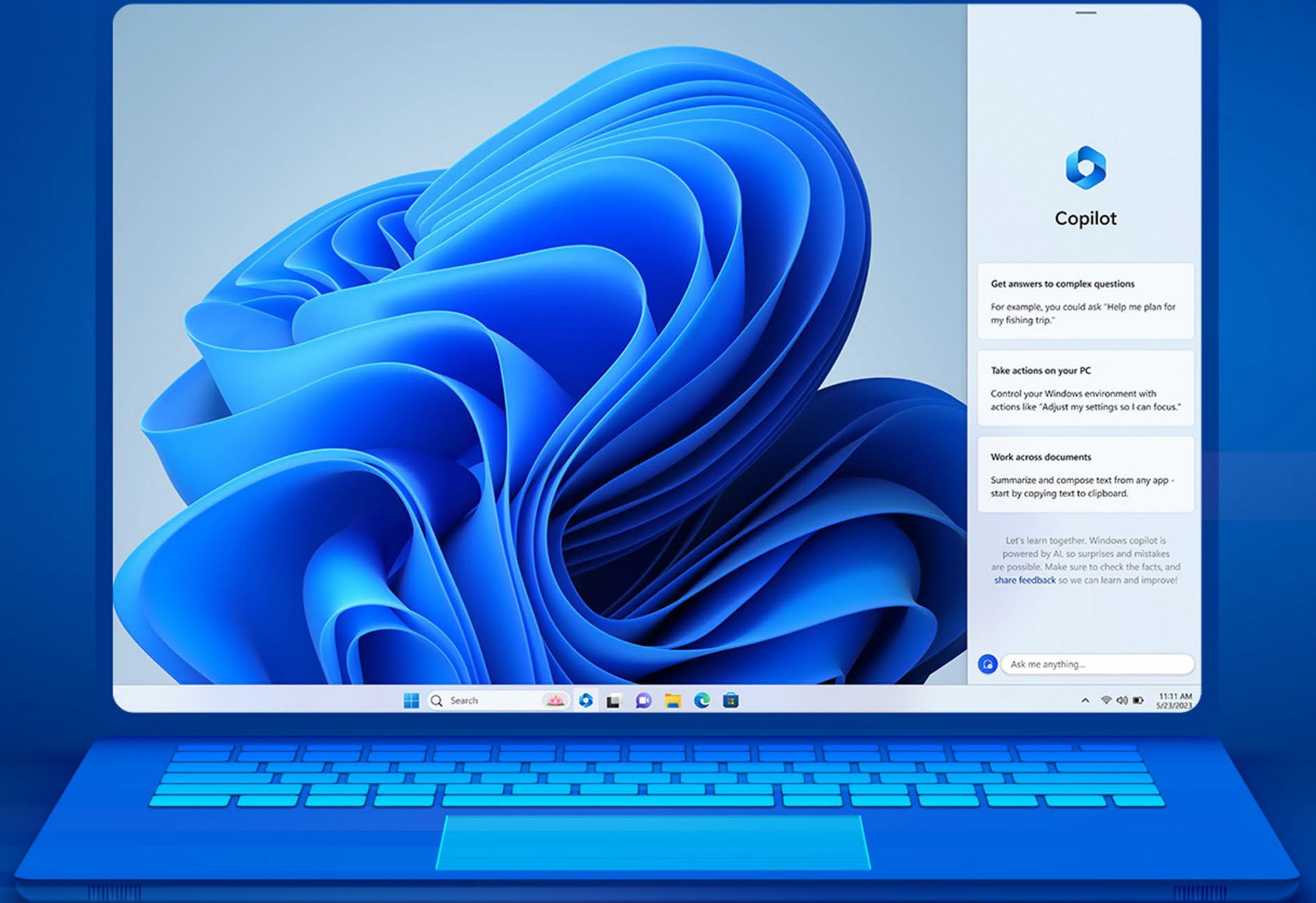
# Age of the AI PC

Launch of Intel® Core™ Ultra

December 14, 2023



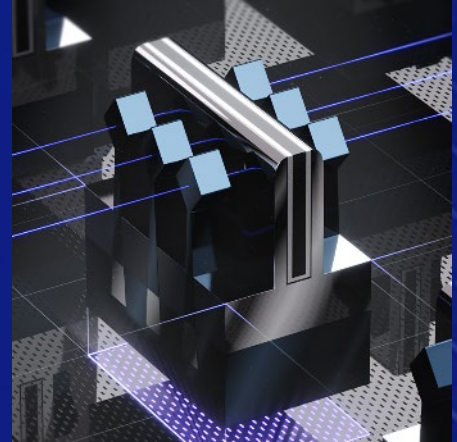




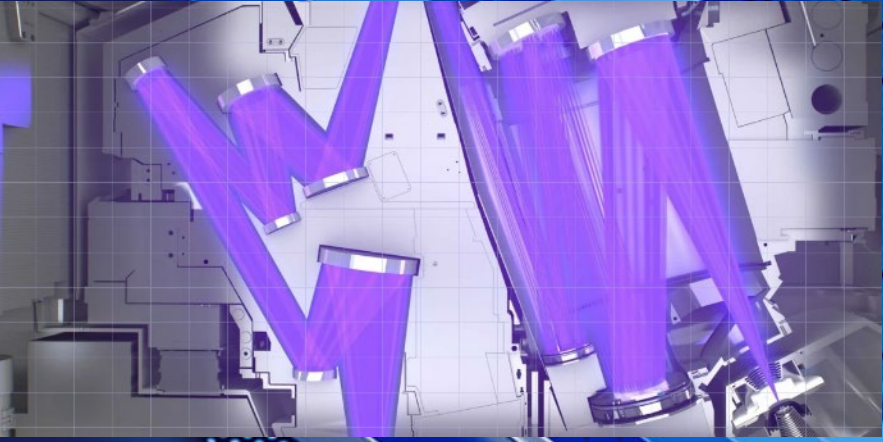




First on Intel 4



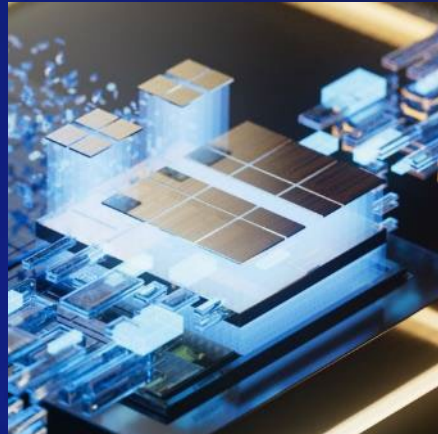
Using EUV Technology



Thunderbolt 4



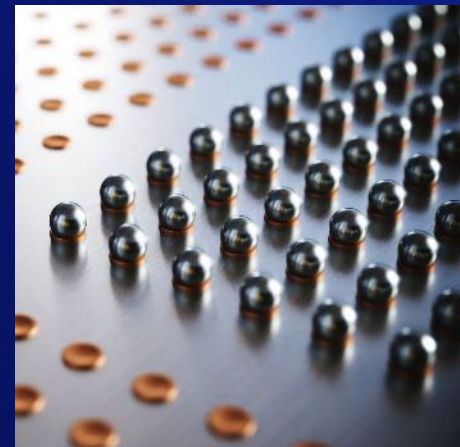
3D Performance Hybrid Architecture



Built-In NPU AI Engine

Low Power Island E-cores

WiFi 7



Foveros 3D Packaging

New P-core & E-core Microarchitectures

Built-in intel ARC



Latest Media & Display Standards







*acer*

**Jerry Kao**

Chief Operating Officer, Acer

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The Upcoming  
**Acer Swift**  
Thin & Powerful Laptop



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The Upcoming  
**Acer Swift**  
Thin & Powerful Laptop



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# Future Generations of Intel Core Processors

Realize your vision with AI PC capabilities





# Performance per unit of energy

must become our industry's mission

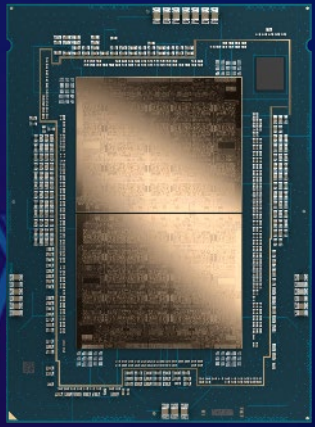




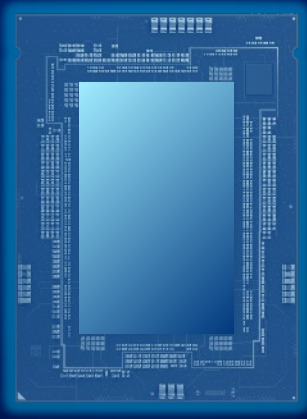


# Xeon Roadmap

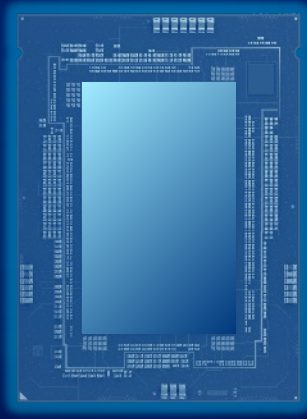
Designed to deliver higher performance using less energy measured as performance per watt



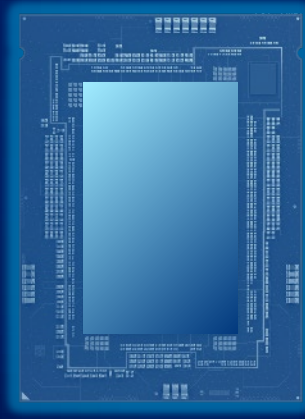
**5th Gen Intel® Xeon®**  
Formerly codenamed  
Emerald Rapids



**Next Gen Intel® Xeon®**  
Codenamed  
Sierra Forest



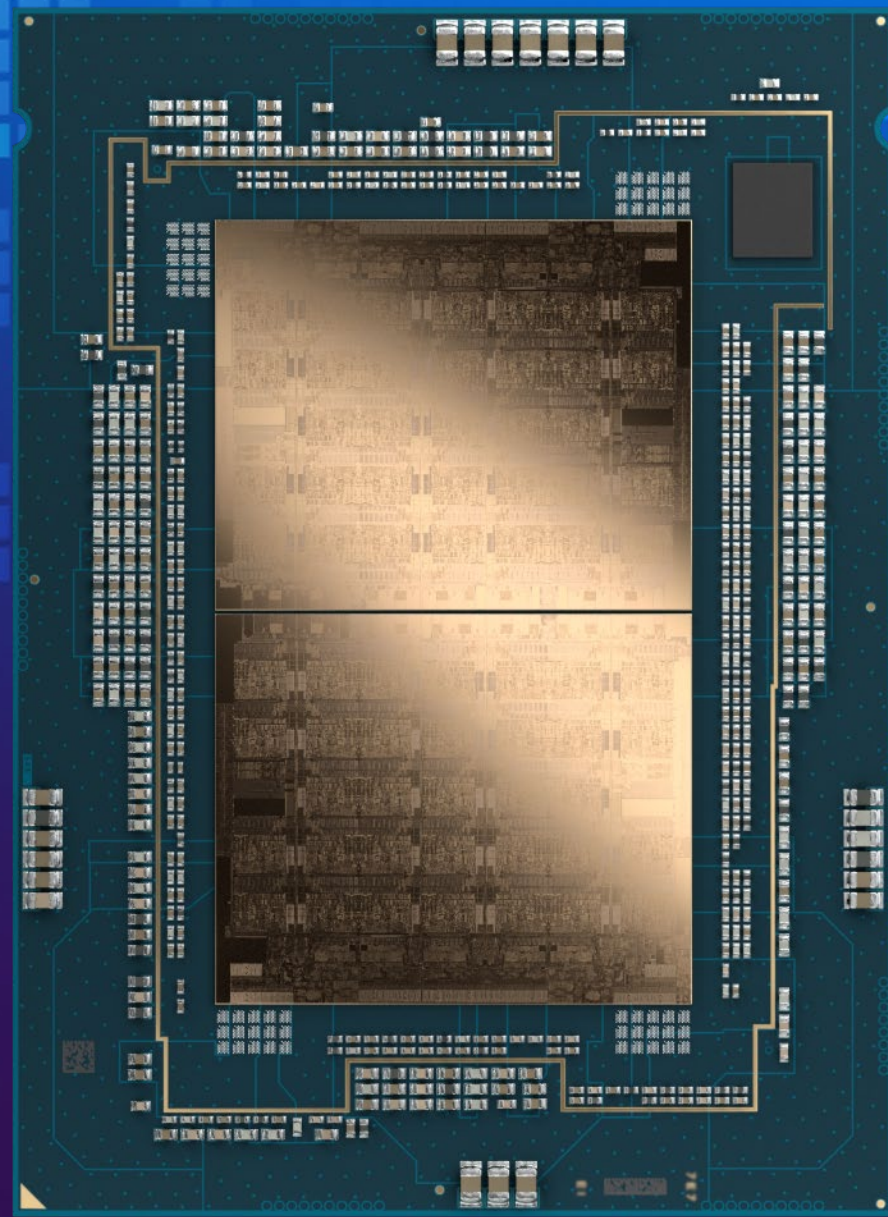
**Next Gen Intel® Xeon®**  
Codenamed  
Granite Rapids



**Next Gen Intel® Xeon®**  
Codenamed  
Clearwater Forest







# Launch of 5th Gen Intel® Xeon® Scalable Processor

Formerly codenamed Emerald Rapids

December 14, 2023

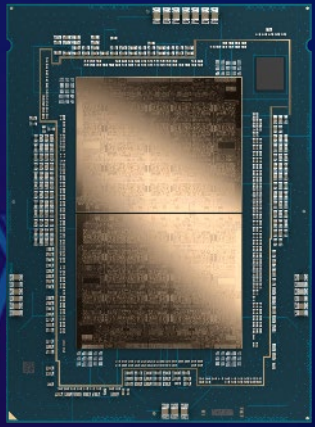




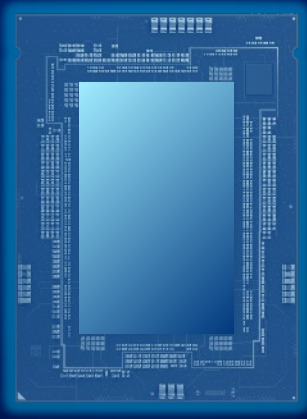


# Xeon Roadmap

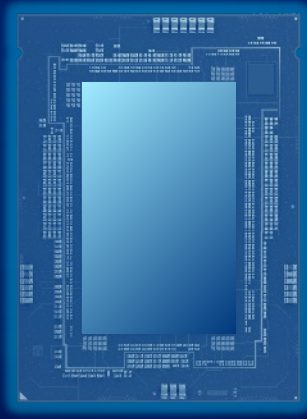
Designed to deliver higher performance using less energy measured as performance per watt



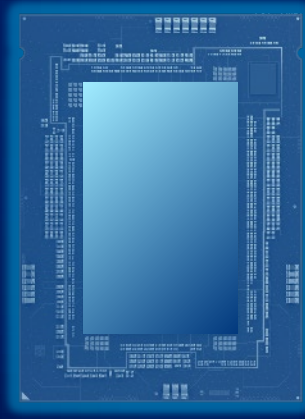
**5th Gen Intel® Xeon®**  
Formerly codenamed  
Emerald Rapids



**Next Gen Intel® Xeon®**  
Codenamed  
Sierra Forest



**Next Gen Intel® Xeon®**  
Codenamed  
Granite Rapids



**Next Gen Intel® Xeon®**  
Codenamed  
Clearwater Forest

Birch Stream Platform Architecture

Based on architectural projections as of August 21, 2023 relative to prior generation. Your results may vary.



## Sierra Forest demo

2 processors with 288 cores

```
processor      : 559
processor      : 560
processor      : 561
processor      : 562
processor      : 563
processor      : 564
processor      : 565
processor      : 566
processor      : 567
processor      : 568
processor      : 569
processor      : 570
processor      : 571
processor      : 572
processor      : 573
processor      : 574
processor      : 575
demo@srfubuntu22p4-3405:~$
```

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XEON®

# 288 cores

## Intel® Xeon® with E-core

Launch 2024





# Security

Exponential compute creates a vastly broader attack surface



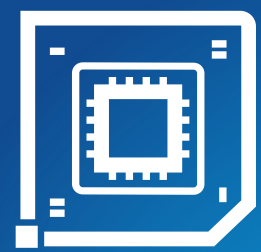
The background is a dark blue digital landscape with various glowing elements. On the left, there's a large cloud icon with a grid pattern below it. In the center, a circular graphic contains a shield with a padlock, surrounded by concentric circles and arrows. To the right, there are several data visualization elements: a bar chart with red and blue bars, a line graph with red and blue lines, and a grid of small squares. The overall aesthetic is futuristic and tech-oriented.

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security

**Security starts with intel**

Learn more in Day 2 keynote





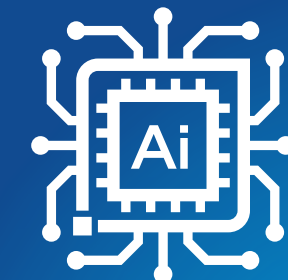
Compute



Connectivity



Infrastructure



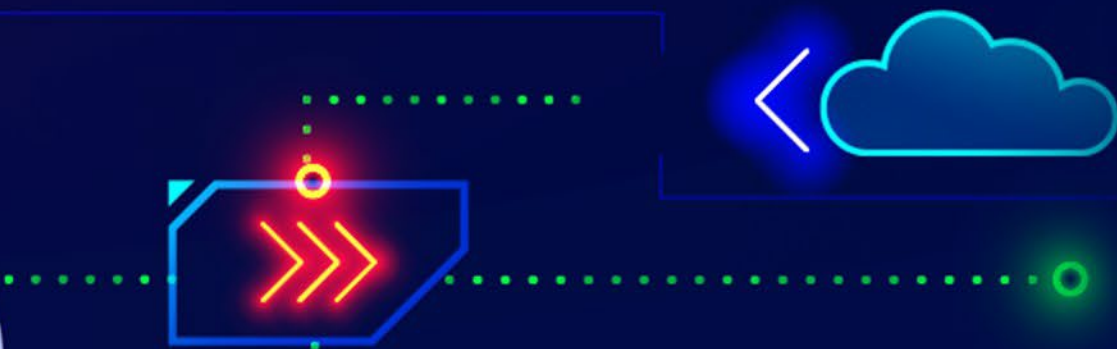
Artificial  
Intelligence



Sensing

# Technology Superpowers

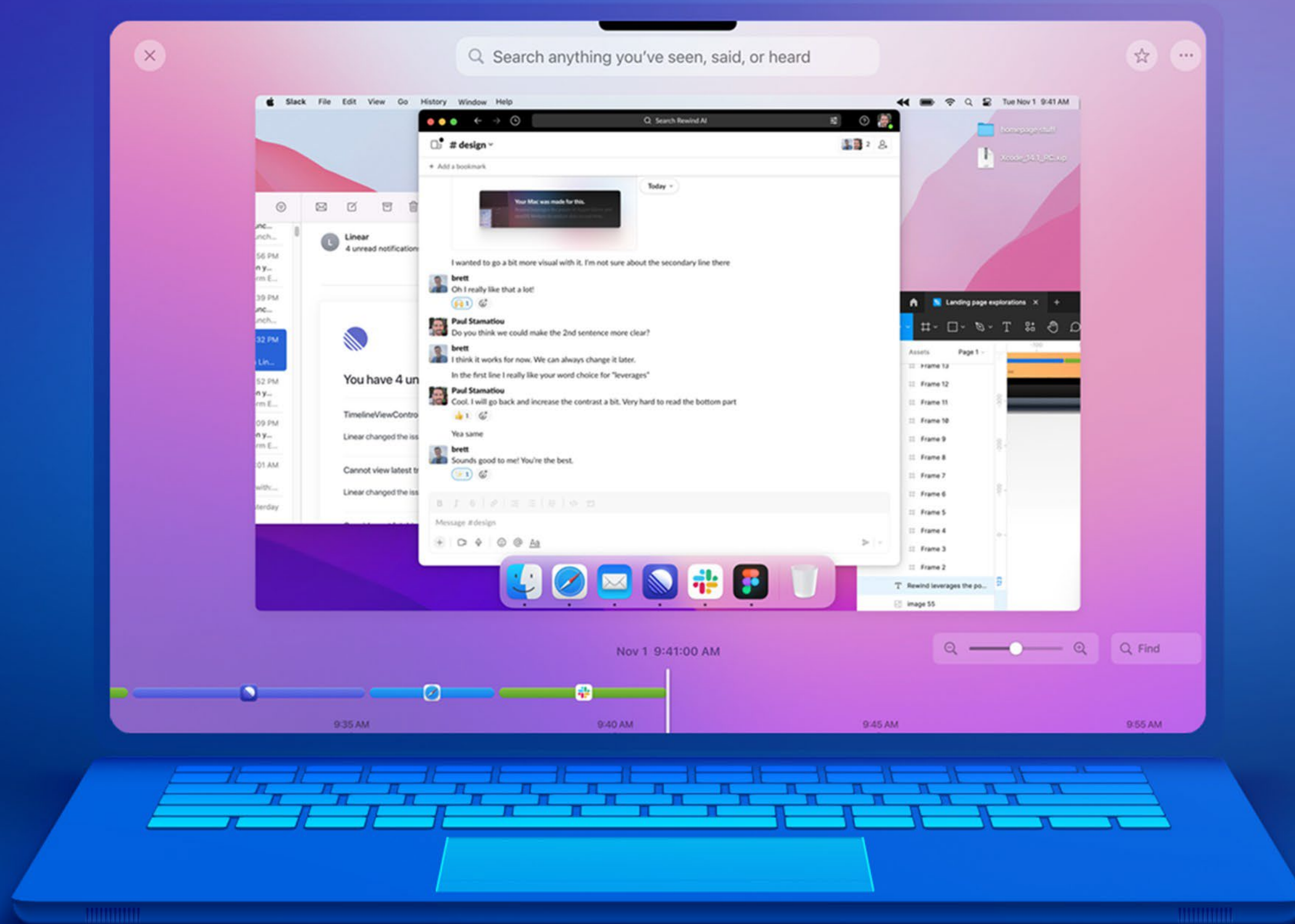
Enabled by Siliconomy





# ◀◀ Rewind

Dan Siroker  
Founder of Rewind.ai

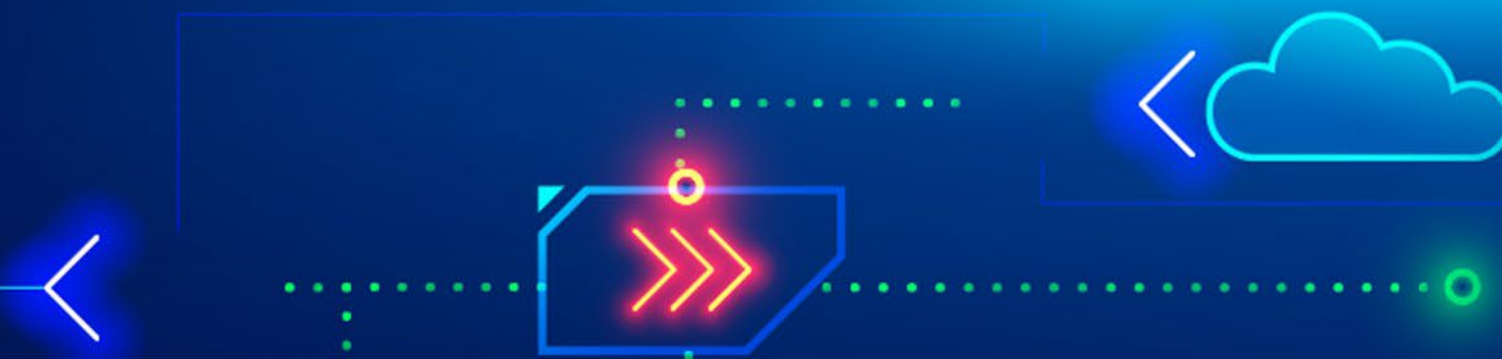
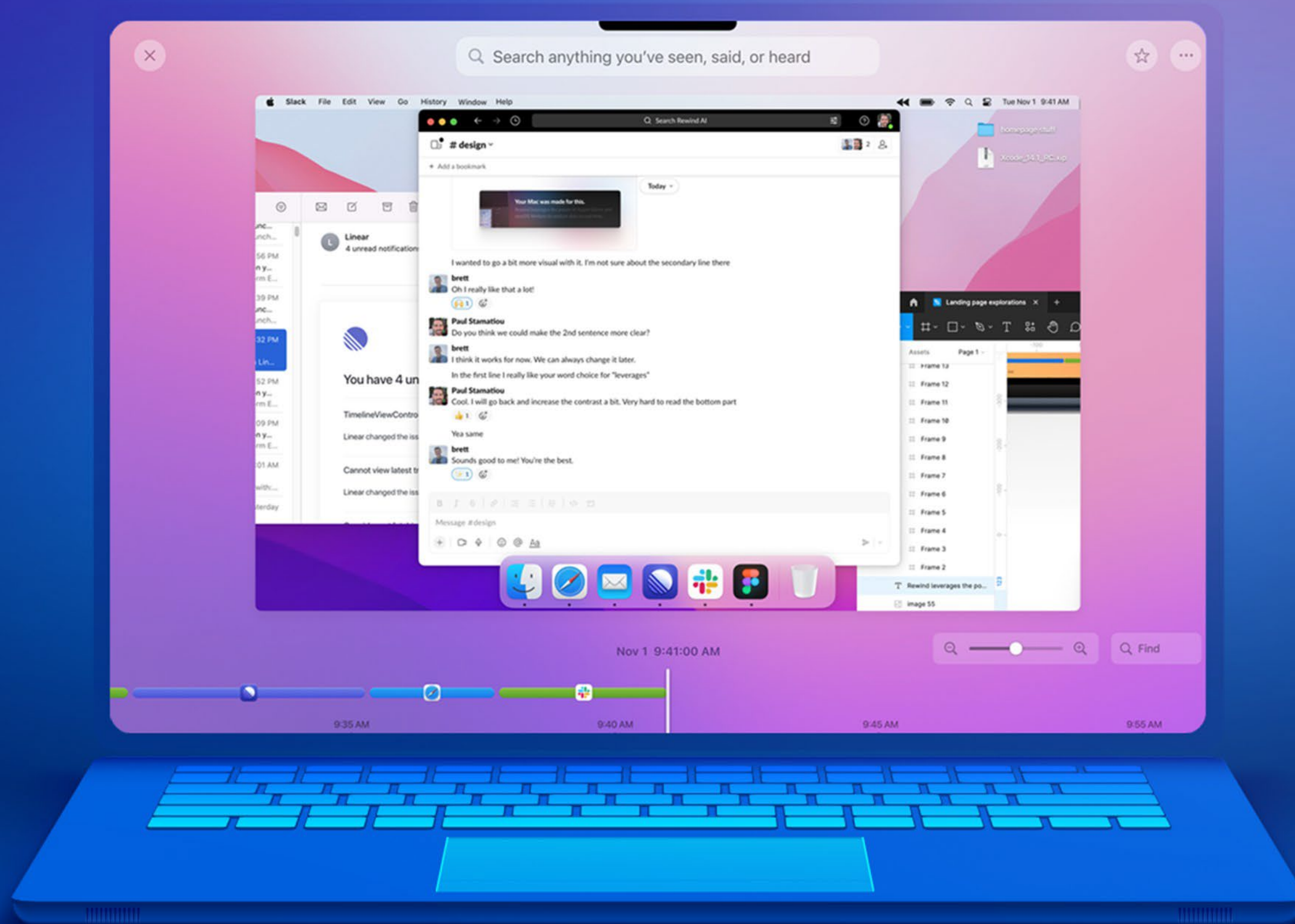




◀◀ Rewind

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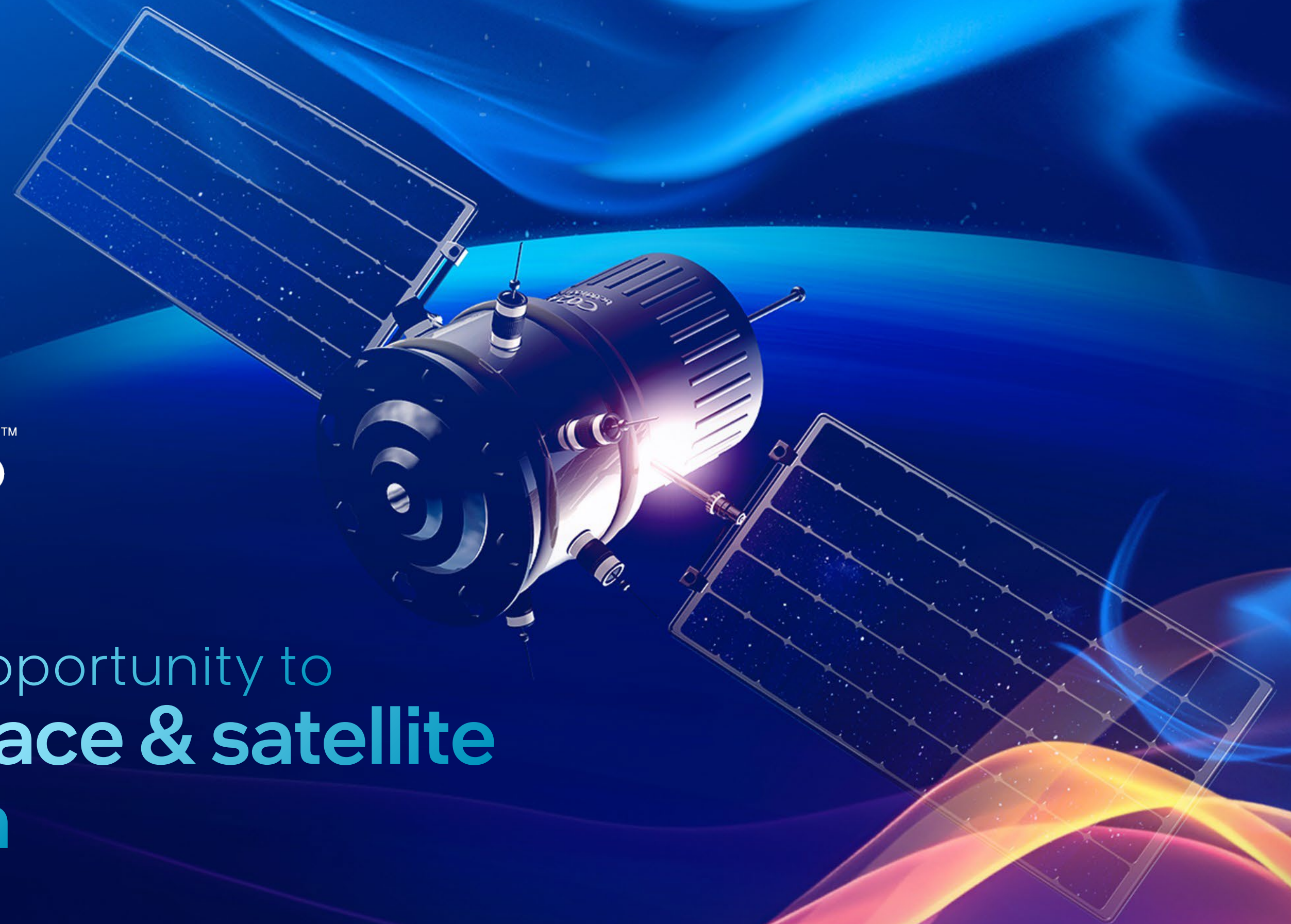
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**ANTARIS**<sup>™</sup>  
SOFTWARE FOR SPACE<sup>™</sup>

Identified massive opportunity to  
**democratize space & satellite  
tech ecosystem**

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**OpenVINO™** 2023.1

## AI inferencing and deployment

Runtime of choice for developers  
on client and edge platforms

**90%**

Increase in OpenVINO  
Downloads since last year

Based on internal Intel data

**LLaMA**  
by **Meta**

Optimizations to many  
of the GenAI models





# intel. + arm



“Ensuring that developers have access to leading-edge tools and capabilities that allow them to write once and deploy anywhere is a key focus for Arm. We are pleased to see initiatives such as **OpenVINO which specifically target the deployment of complex AI models to Arm CPUs** and enable critical cross-platform support as more intelligent compute moves to the edge.”

**Dermot O'Driscoll**

Vice President of Product Solutions,  
Infrastructure Line of Business, Arm





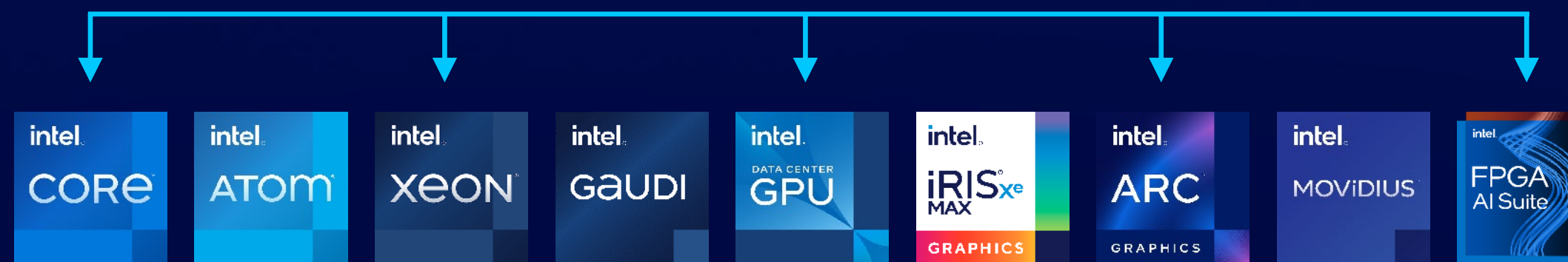
# Hybrid AI

Enhancing performance and accessibility



**OpenVINO™**  
Optimized Performance

CPU      iGPU      GPU      NPU      FPGA



Linux    Windows    macOS

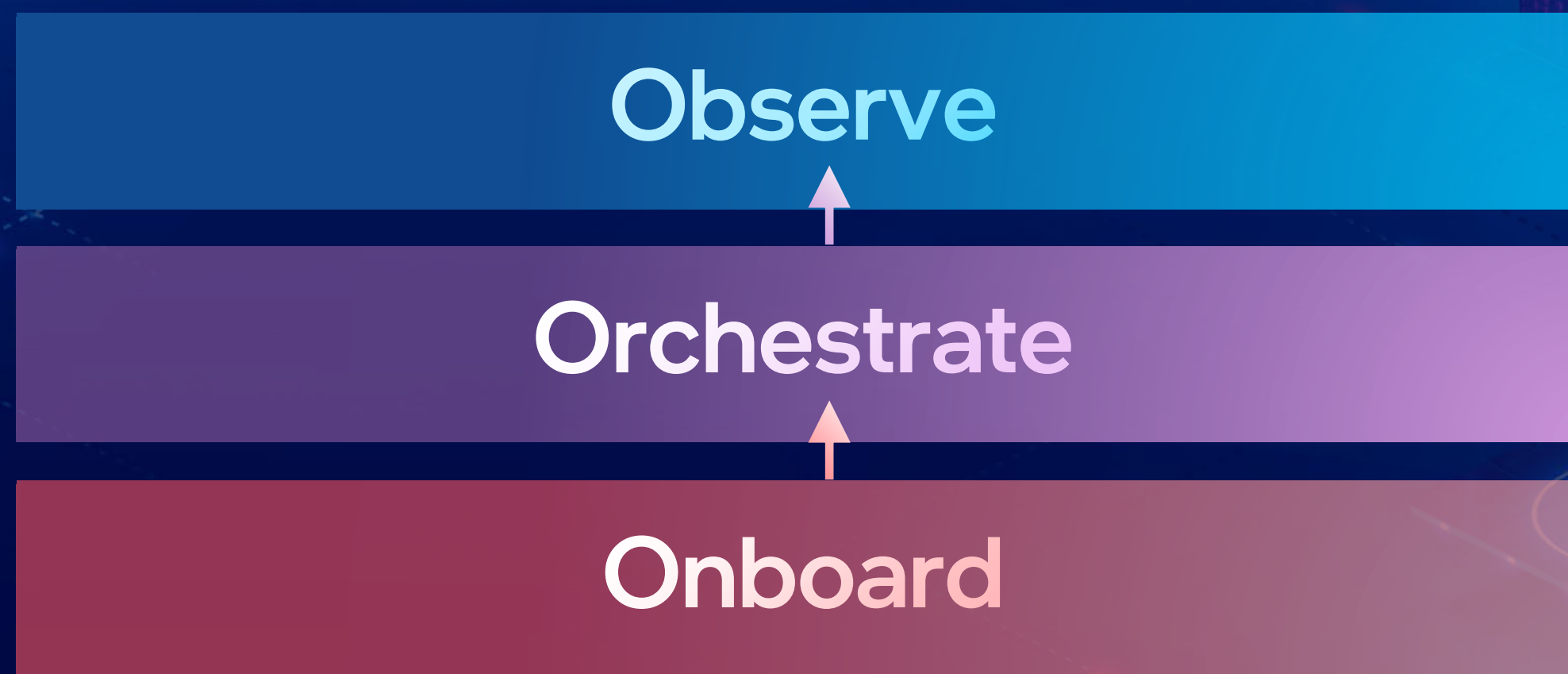
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# Project Strata

the development of a modular edge-native software platform that will accelerate the adoption of AI-Automation at the Edge





**FIT MATCH.ai**

**Meera Bhatia**

Chief Operating Officer,  
Fabletics





**FIT MATCH.ai**

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DEEP RENDER

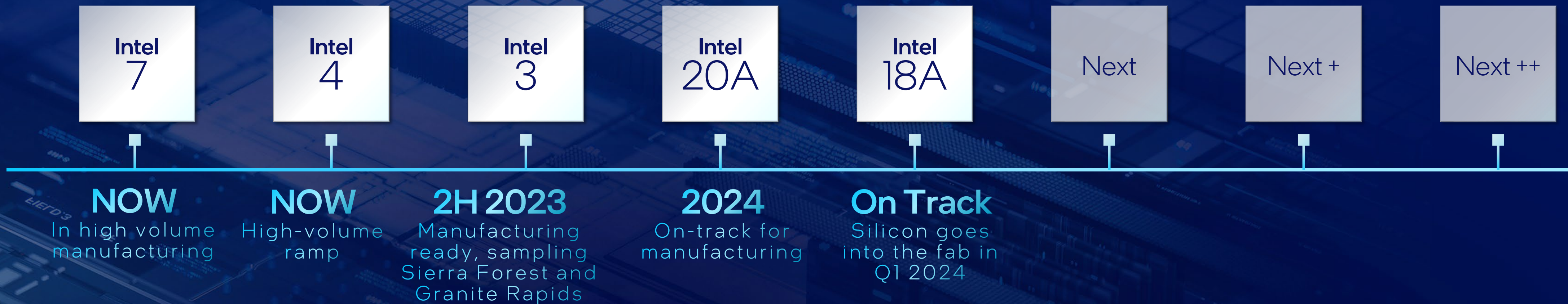
Intel 2023 Startup Innovator  
**Award Winner**

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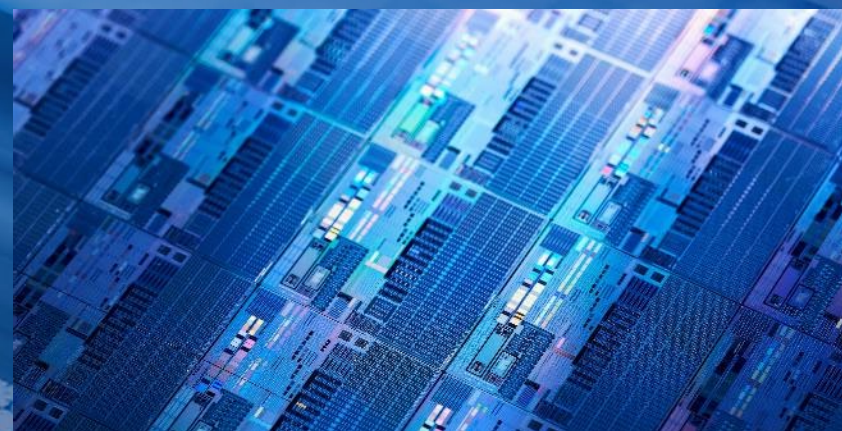
# Beyond 5 Nodes in 4 Years

Looking into the future today





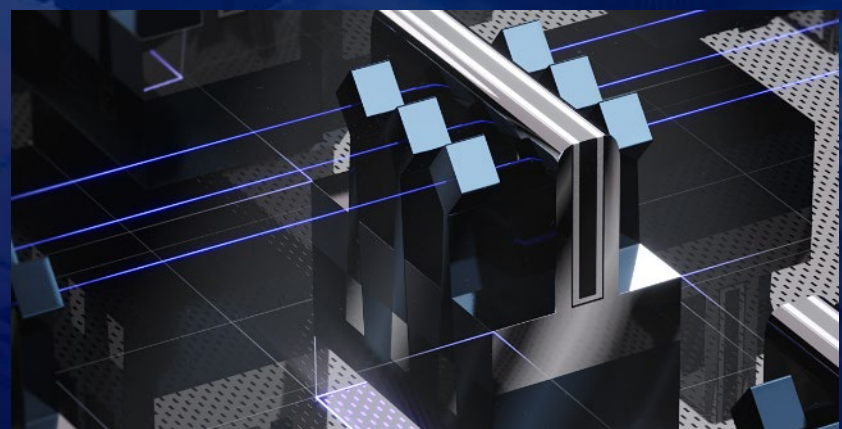
**Release the 0.9 PDK**  
to foundry customers



**Test chips**  
for multiple programs



**Ribbon FET and PowerVia**  
continuously evolving  
process technology



**High-NA EUV technology**  
development with 18A,  
production with "Intel Next"



# Beyond 5 Nodes in 4 Years

Looking into the future today



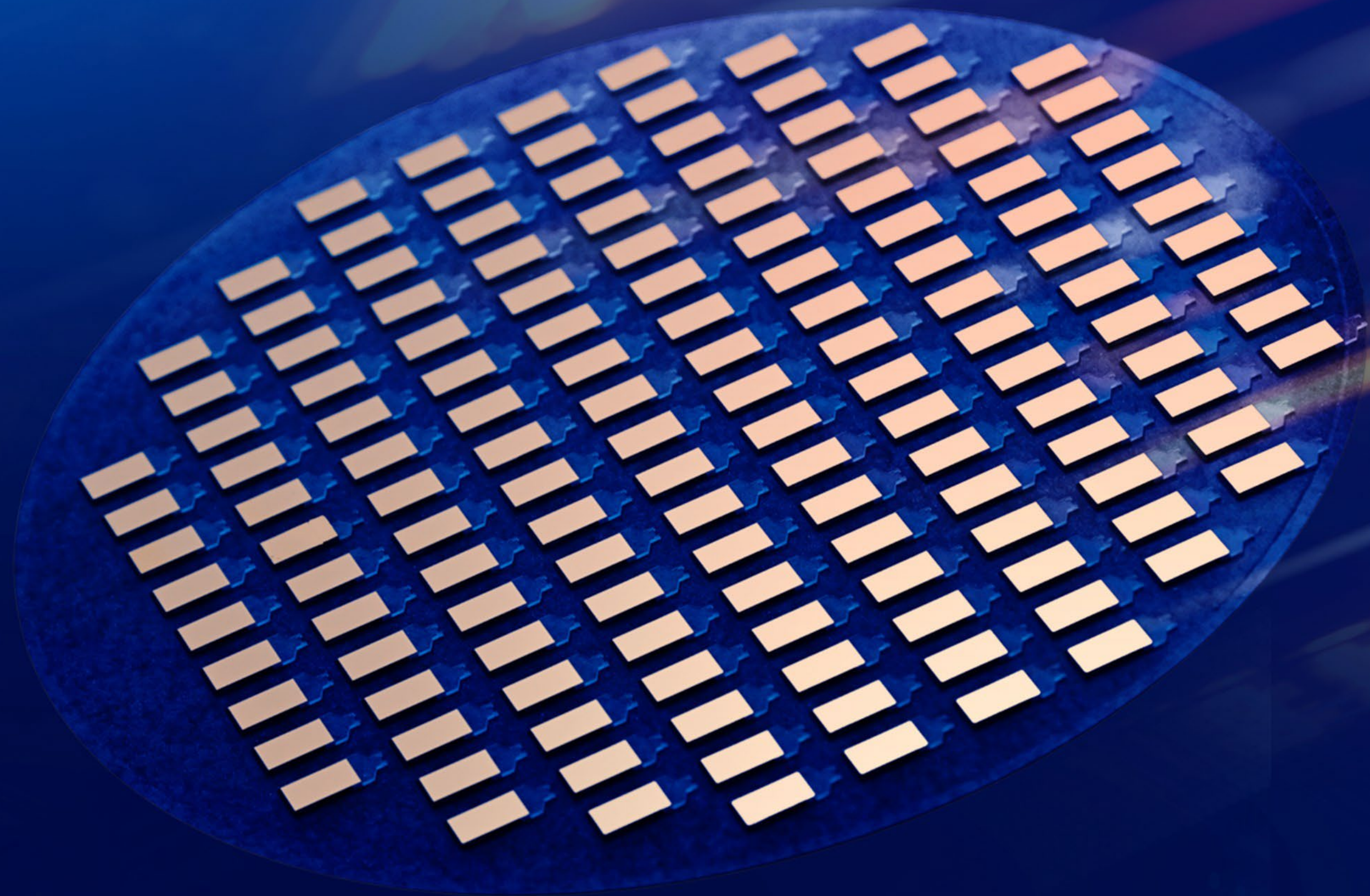
## On Track

Silicon goes  
into the fab in  
Q1 2024



# Advanced Packaging

Industry-first breakthroughs in glass substrates





# \$100 Billion

U.S. Investments



Oregon



Arizona



New Mexico



Ohio



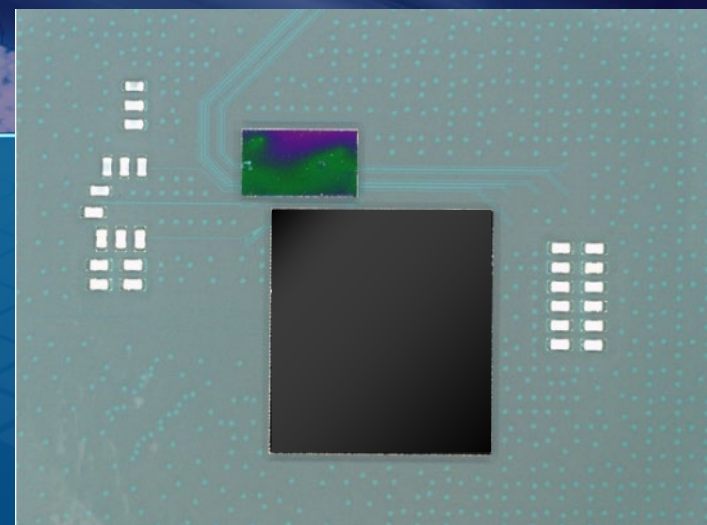
**UCle™ Board Members**



**UCle™ Contributor Members**

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- Advantest
- AkroStar
- Alchip
- Alphawave Semi
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- Ayar Labs
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- Brite Semiconductor
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- Eliyan
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- Global Unichip Corporation
- Huixi Rhino
- IBM
- Imec
- Innosilicon
- JCET
- Juniper Networks
- Keysight
- Kiwimoore
- LG
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- M2 Semi
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- Microchip
- Micron
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- Physim
- Qualitas Semiconductor
- Point2Tech
- proteanTecs
- Rivos
- Semitronix
- Shanghai UniVista
- Siemens
- Silicon Precision Industries
- SK Hynix
- SkyeChip
- Socionext
- Synopsys
- Tenstorrent
- Teradyne
- Tongfu Microelectronics
- Truechip
- University of New Hampshire InterOperability Laboratory
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- UNISOC
- Veri Silicon
- Winbond
- Xpedic
- Zero ASIC
- Zentel





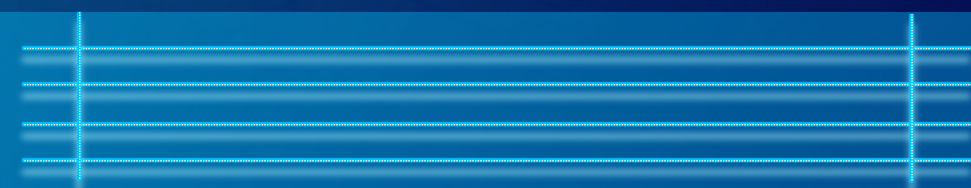
Synopsys UCle

TSMC N3E Technology



Intel UCle

Intel 3 Technology



EMIB

Advanced Packaging Technology

Advanced packaging  
technology codenamed

# Pike Creek

## Industry Interoperability Demo

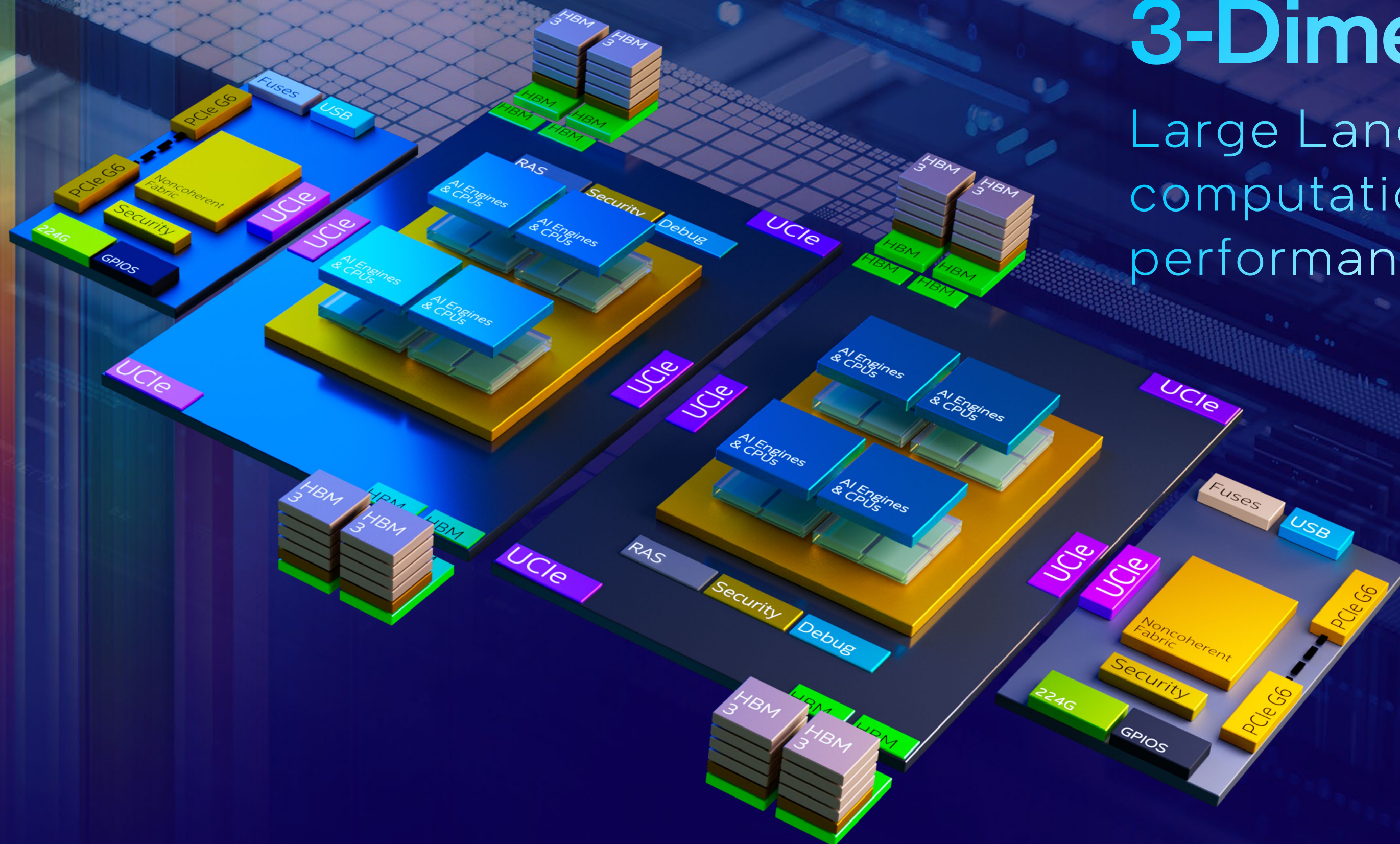
intel<sup>®</sup> synopsys<sup>®</sup>





# 3-Dimensional Silicon

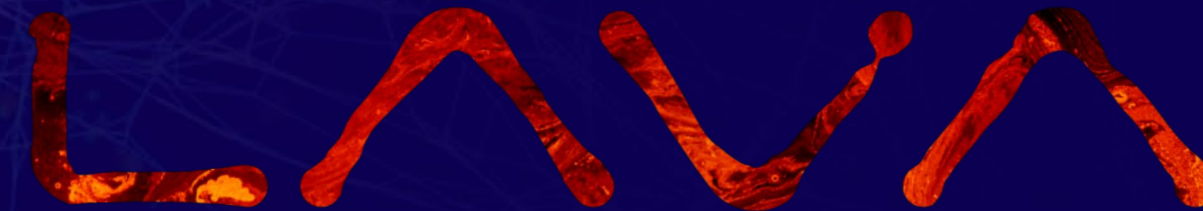
Large Language Model computation needs the highest performance silicon



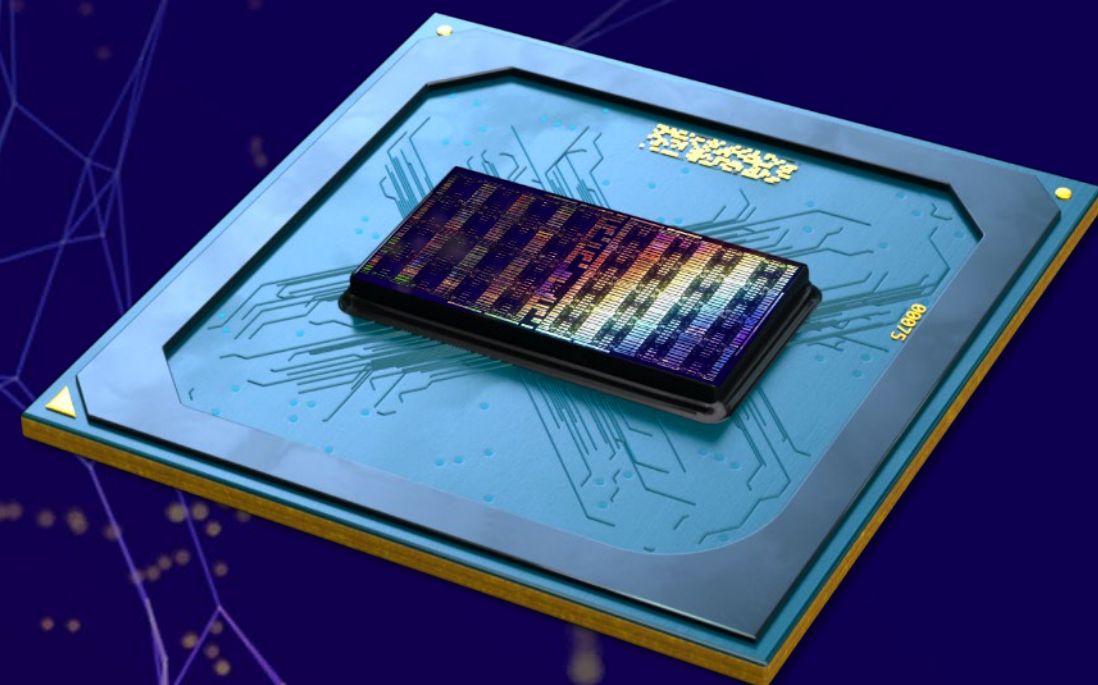


# intel® labs

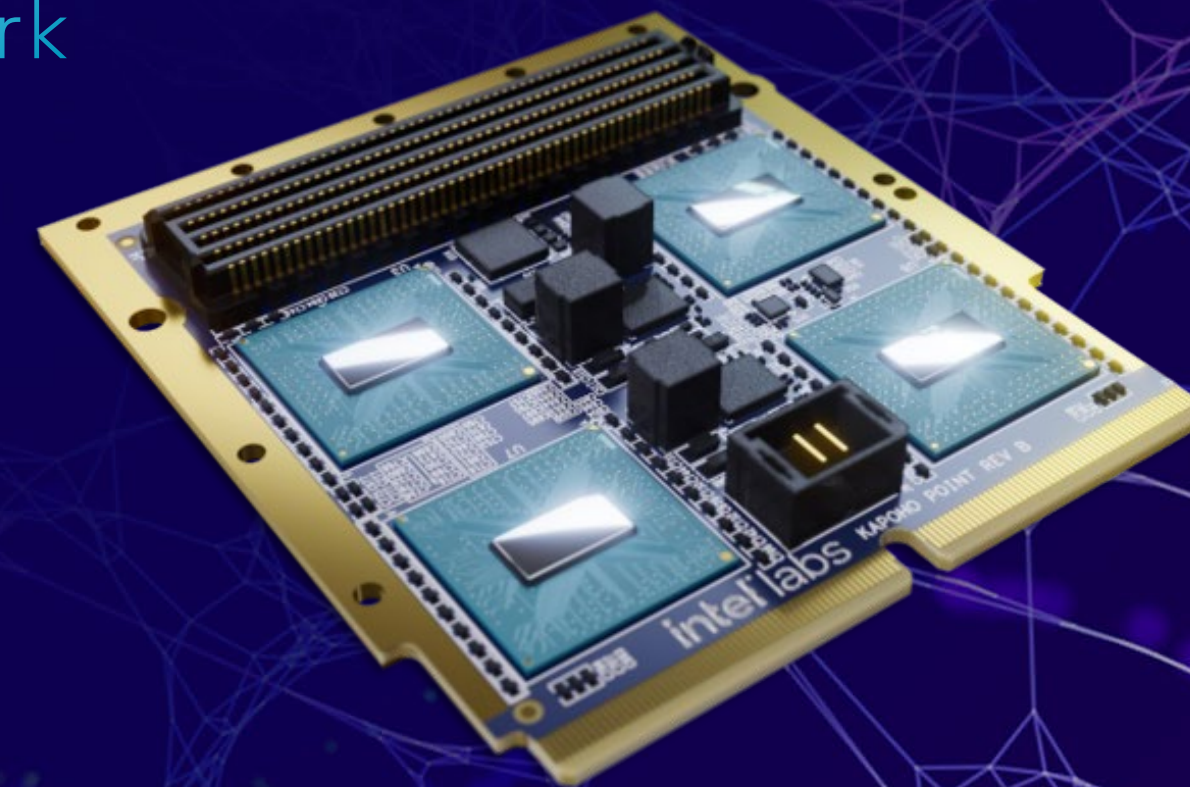
Leading efforts to advance  
**Neuromorphic Computing**



**Open-source**  
software framework



Codename **Loihi 2**  
on Intel 4



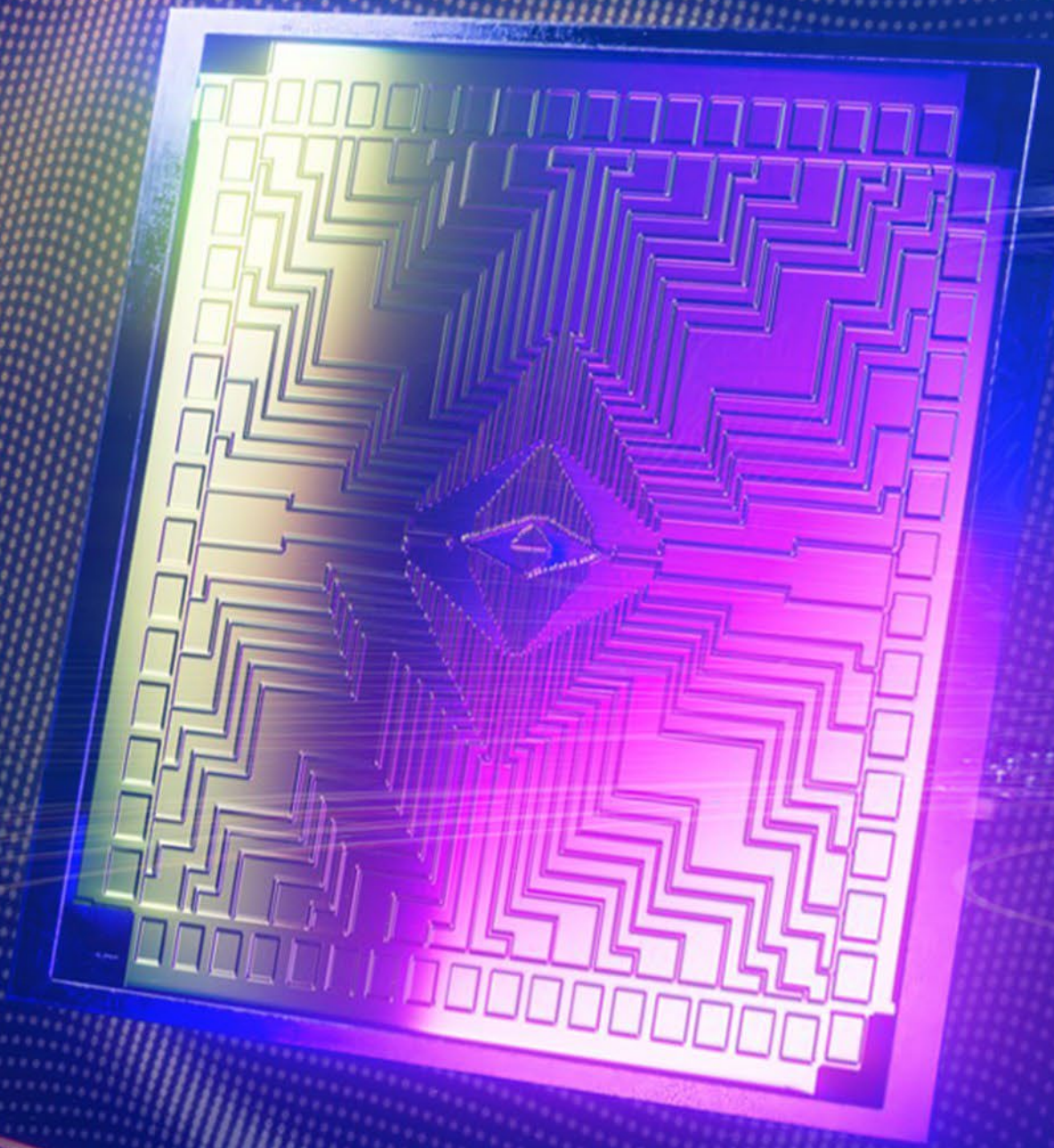
Codename **Kapoho Point**  
8-chip stackable

intel innovation



# Quantum

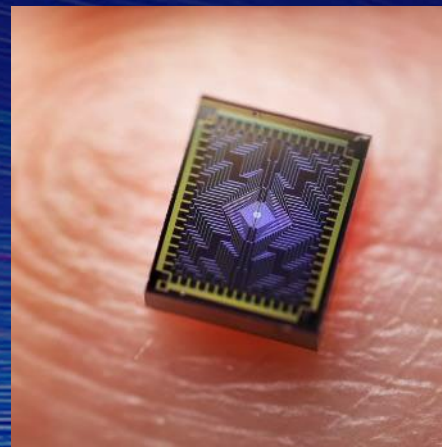
Harnessing the power of quantum physics to solve complex problems exponentially faster than large-scale supercomputers





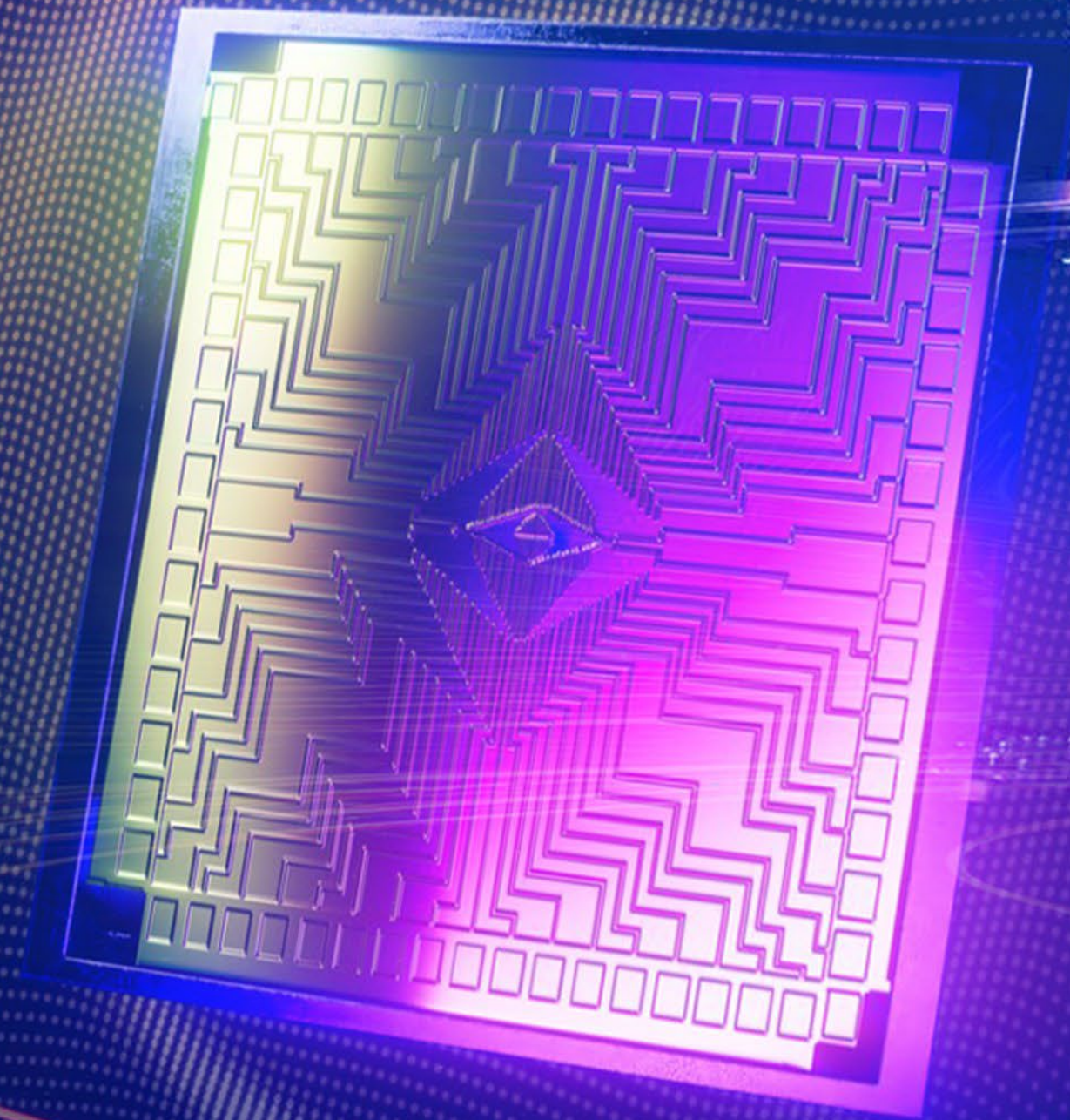
Intel quantum technology codenamed

# Tunnel Falls



**12** qubit device    **50x50** nanometers    **~1 Million** times smaller

**95% Yield Rate**  
across the wafer





# Intel® Quantum SDK

Full-stack approach to quantum computing

Quantum Application

Quantum Compiler

Quantum Runtime

Quantum Control Simulator

Quantum Dot Simulator

Room  
Temperature  
Electronics

Cryogenic Control Chip

Spin Qubit Chip





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**Dr. Fei-Fei Li**

Inaugural Sequoia Professor in the Computer Science Department at Stanford University, and Co-Director of Stanford's Human-Centered AI





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## December 14, 2023



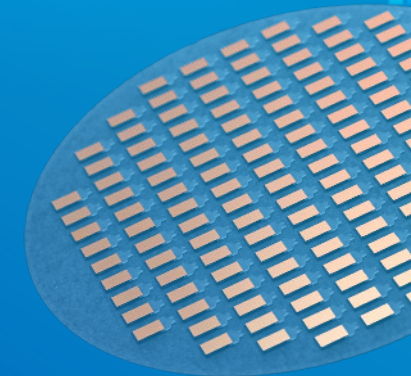
Launch  
of Intel®  
Core™ Ultra



Launch  
of 5th Gen  
Intel® Xeon®

## Advanced Packaging

Industry-first  
breakthroughs  
in glass substrates

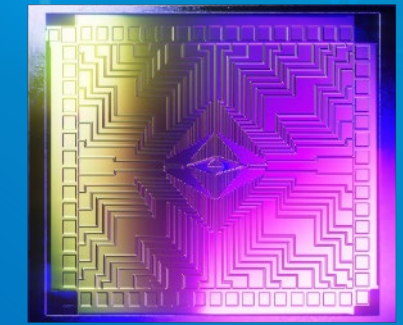


Software Initiative  
codenamed  
**Project Strata**



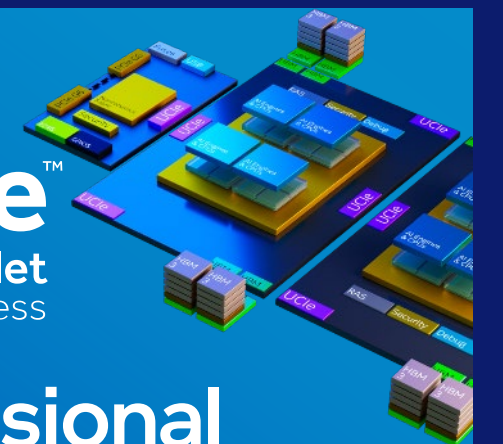
## Quantum

Innovating for the **future**



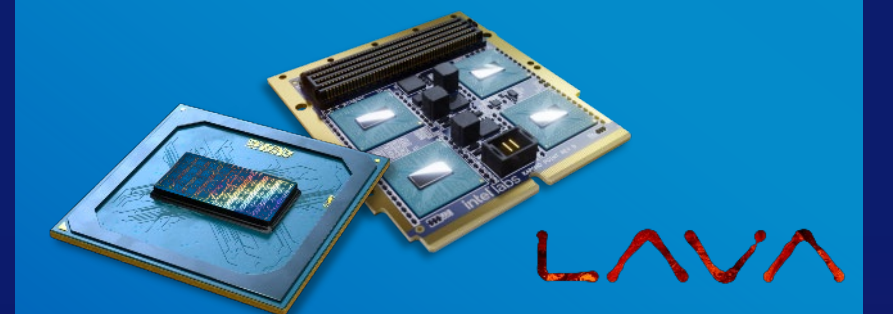
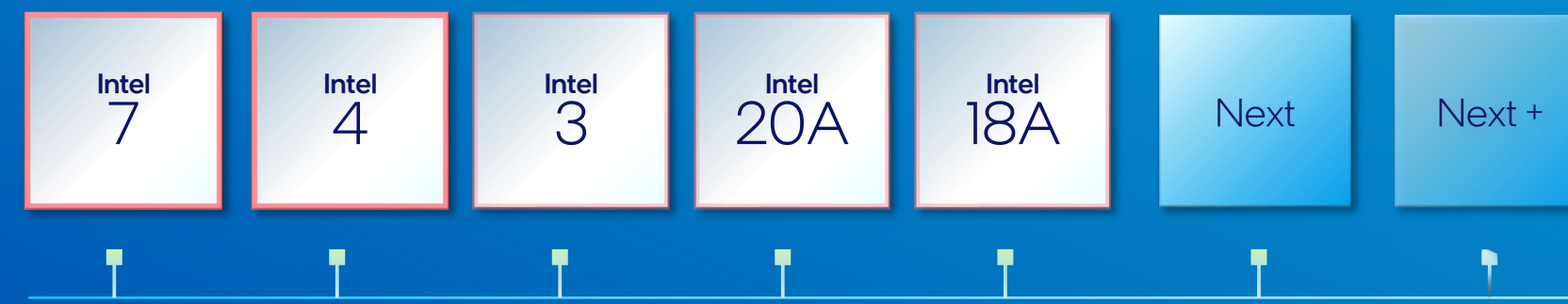
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## 3-Dimensional Silicon



## Beyond 5 Nodes in 4 Years

Looking into the future today



## intel labs Neuromorphic Computing

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