

The Future is Bright for Chips

A simplistic view, formed during “detox”

Outline

Reflection on the past

Vision for the future: market & tech drivers

A (small) example of the “bright” future

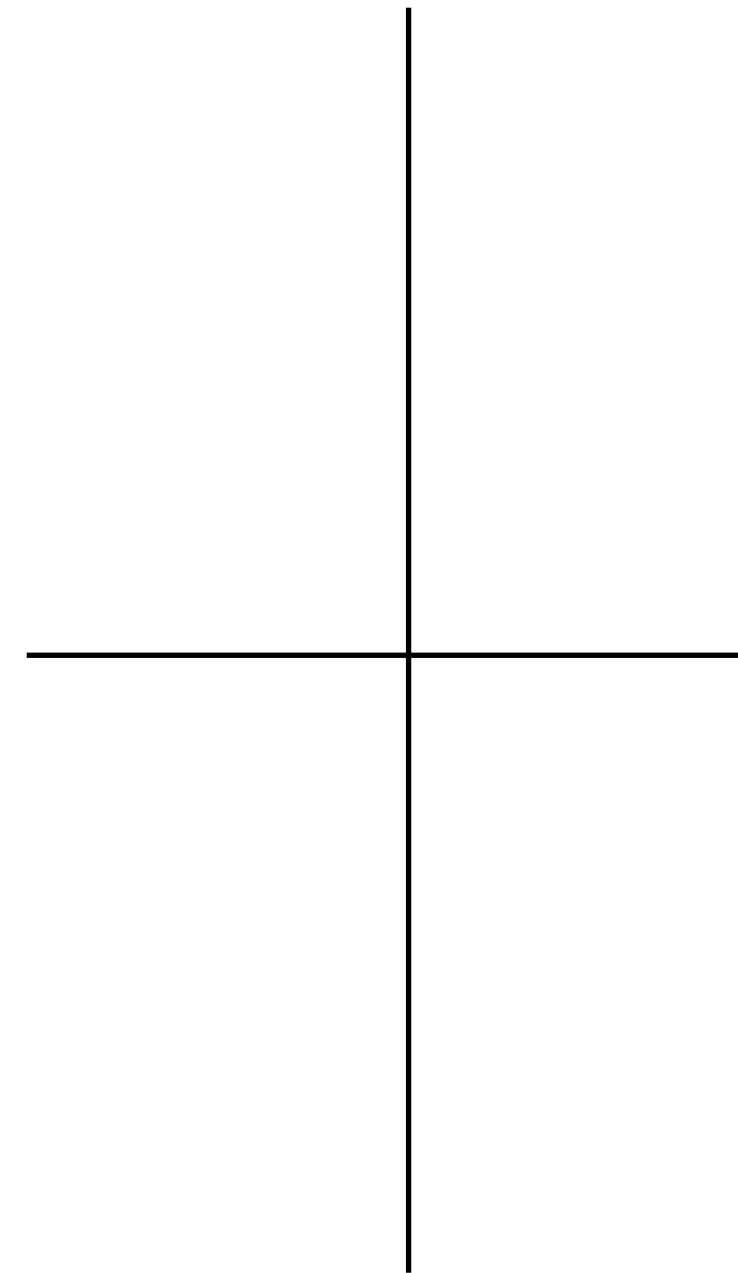
My Personal Journey of Discovery

Corporate

Startup

Design

Manufacturing

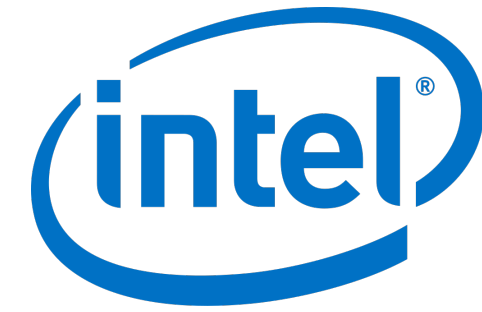


My Personal Journey of Discovery

Corporate

Startup

Design



Manufacturing



*

**

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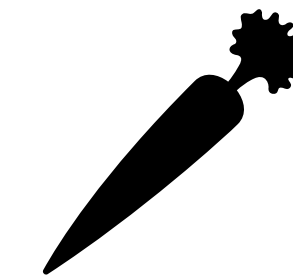
AMERICA'S
FRONTIER
FUND

* Board
** Advisor

Future of Chips

Future of Chips

(One Example)
Emerging Market Trend

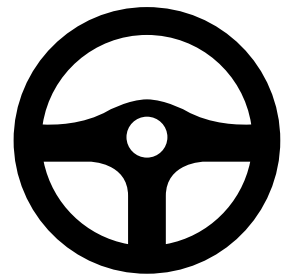


**Vertical
Integration**

Emerging Technology
Enablers

Future of Chips

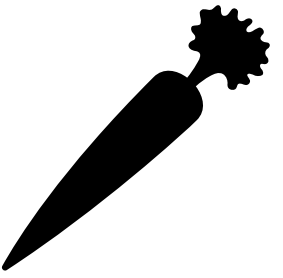
(One Example)
Emerging Market Trend



Chiplets



**(Generative)
AI**



**Vertical
Integration**

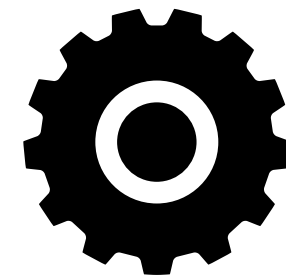
Emerging Technology
Enablers

Future of Chips

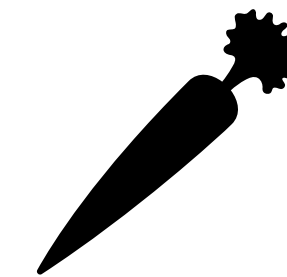
(One Example)
Emerging Market Trend



Chiplets



How ?

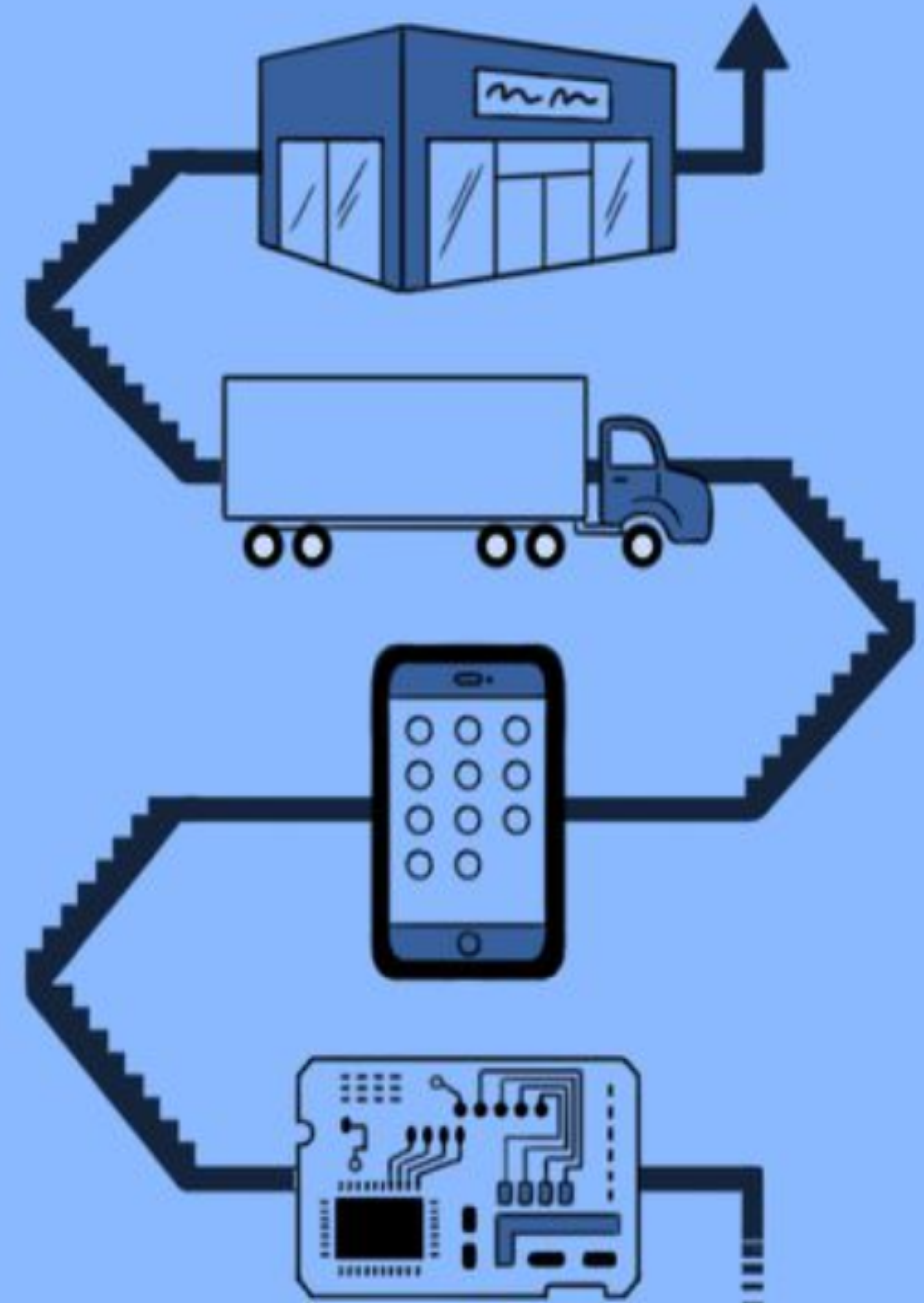


**Vertical
Integration**



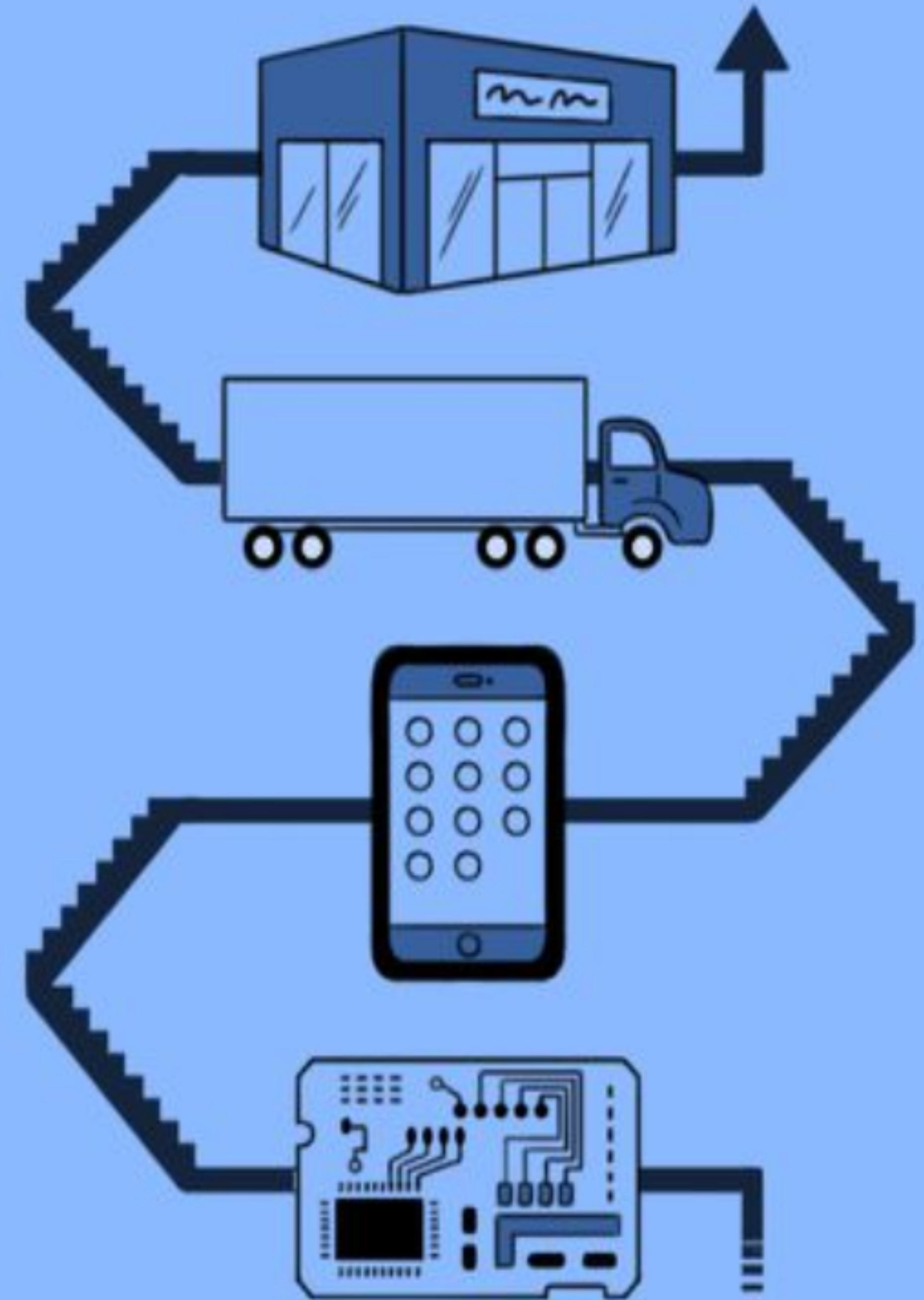
**(Generative)
AI**

Vertical Integration



Vertical Integration

- Development and deployment **cost**
- Supply chain **resilience**
- Reliability, safety and **security**



Chiplets

Learn

Share



Sense

Act

Chiplets

- Thorough **Exploration**, partitioning or integration
- Rapid **Design**, electronics and photonics
- Robust **Manufacturing**, conventional or novel materials

Learn

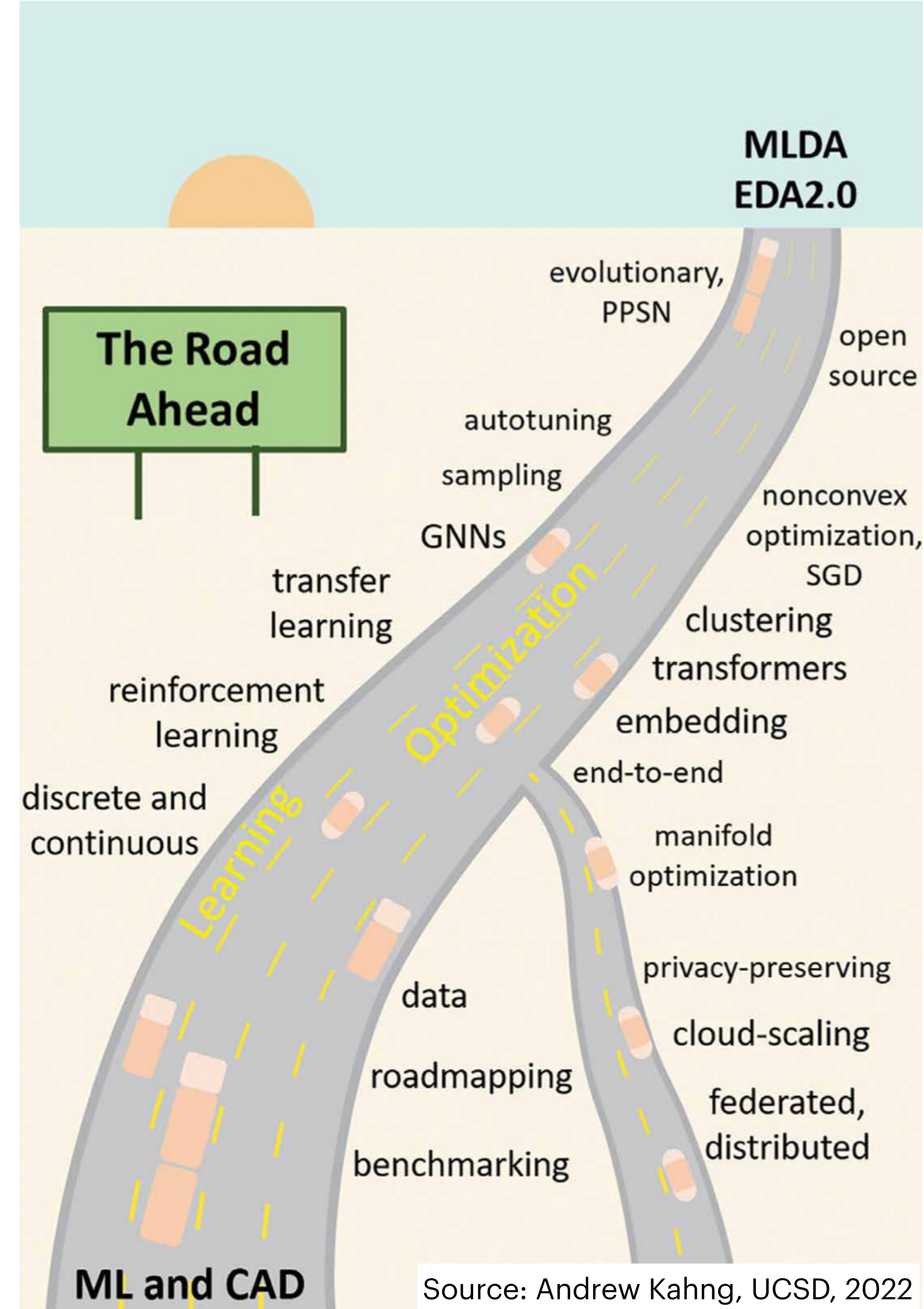
Share



Sense

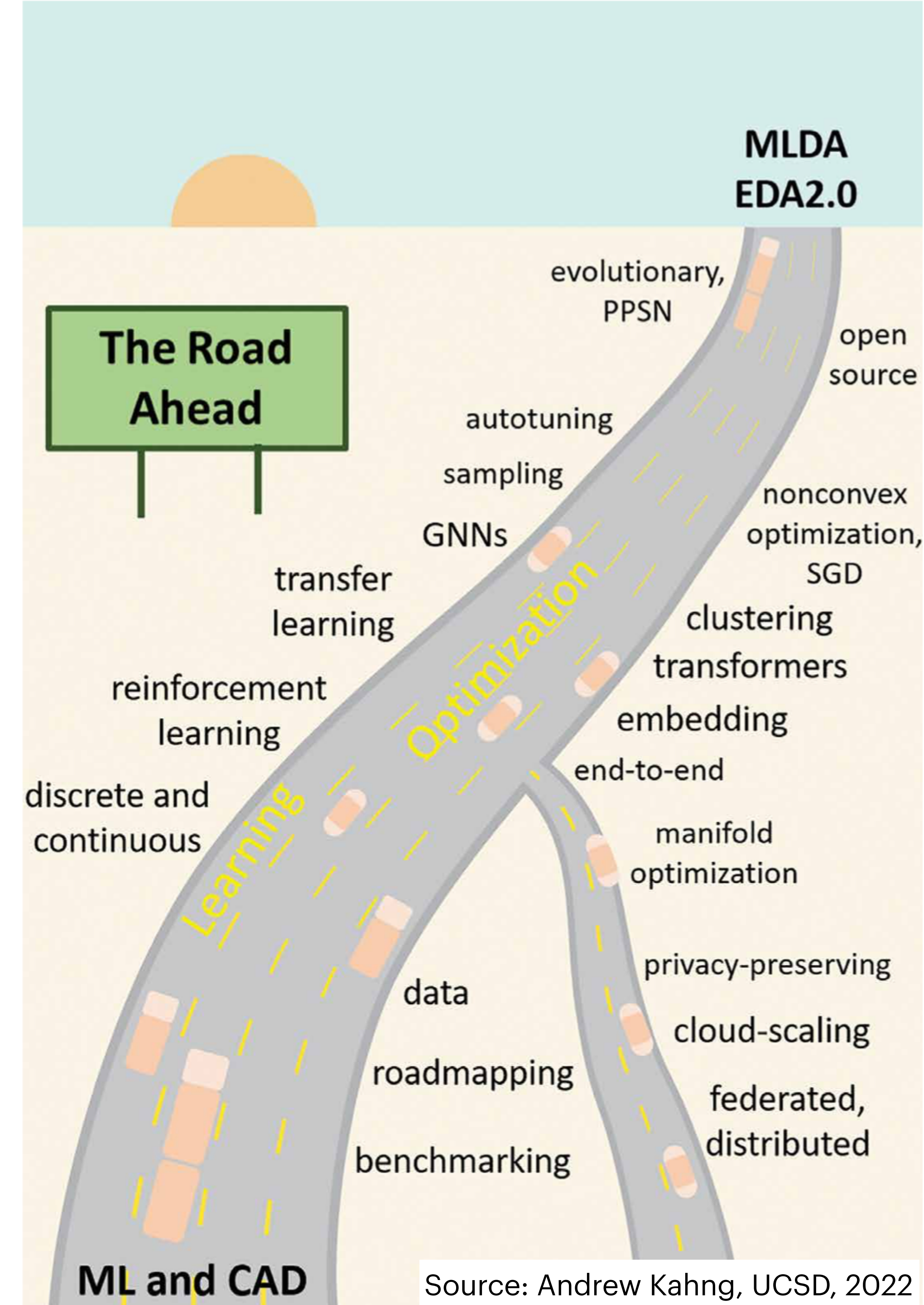
Act

AI



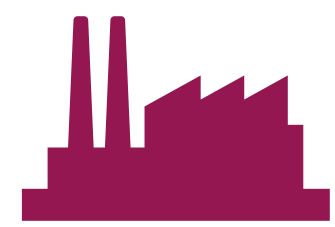
AI

- Open **Data**
- Explainable **Model**
- **Benchmark**-able Results

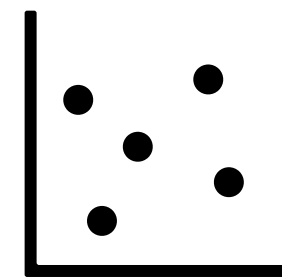


Example: AI-Assisted Photonics Design

Example: AI-Assisted Photonics Design



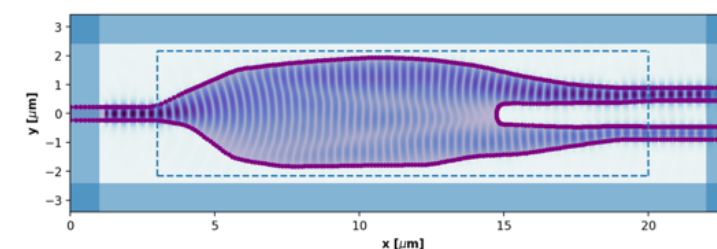
Fab



Data



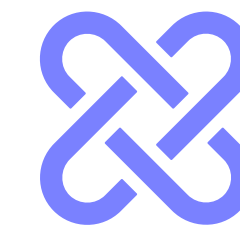
WAVE
PHOTONICS
Optimizer
(Frequency adaptable)



Library



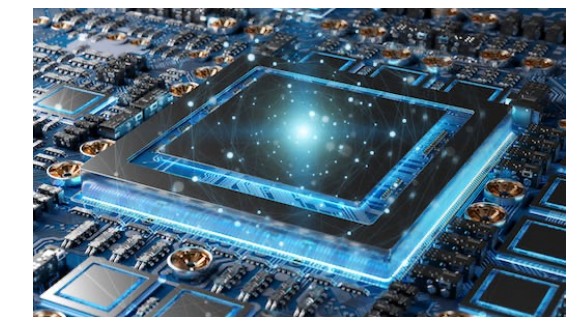
Fabless



Design Tool

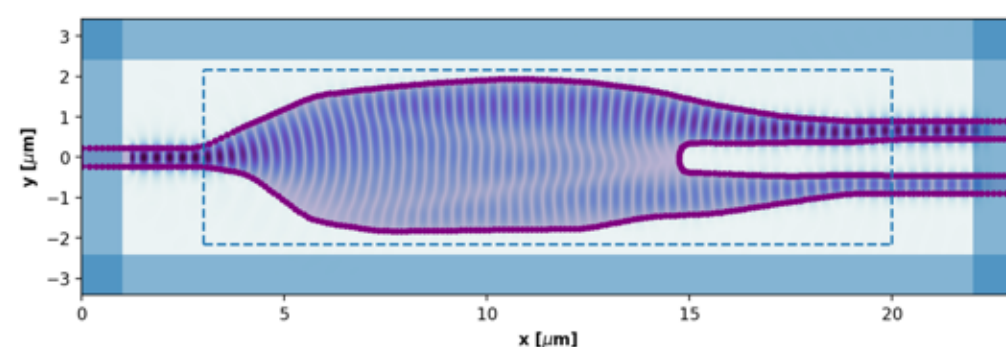


Fabless



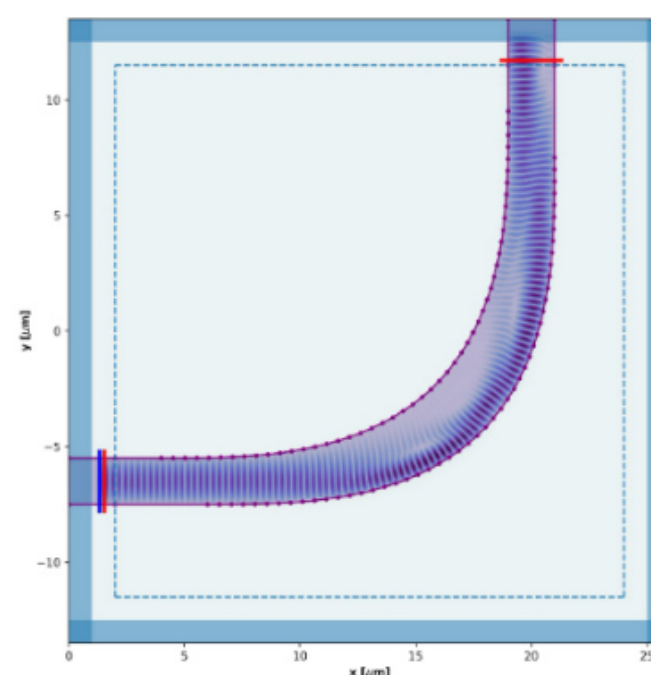
Results

Better



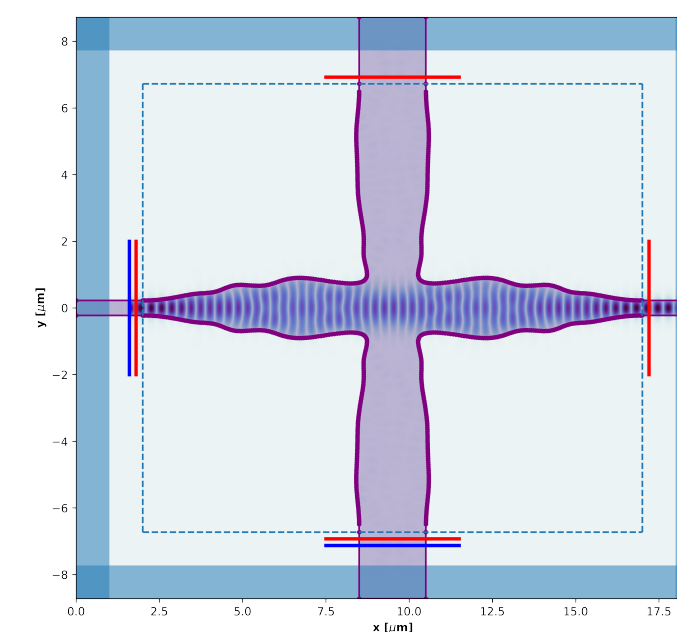
4X reduction of loss
for a 50:50 splitter

Smaller



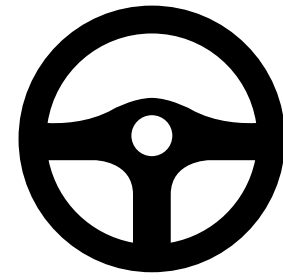
4X reduction of radius
for a bend

Faster



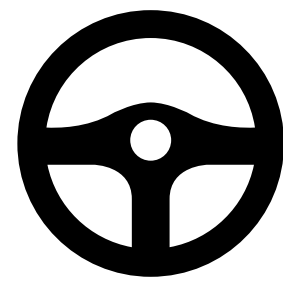
Months to Days
Rapid spin for
wavelengths, bandwidths,
custom design parameters,
and PDK revisions

Recap: Market and Tech Drivers



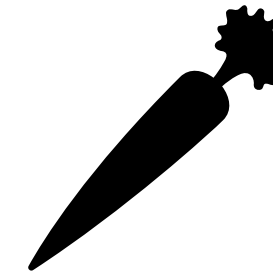
Chiplets

- Exploration
- Design
- Manufacture



(Generative) AI

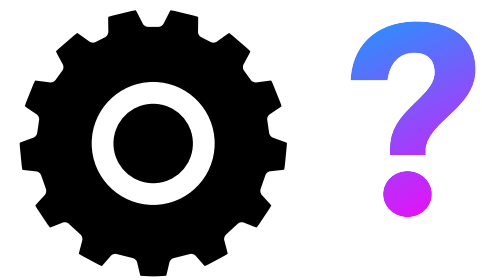
- Data
- Model
- Benchmark



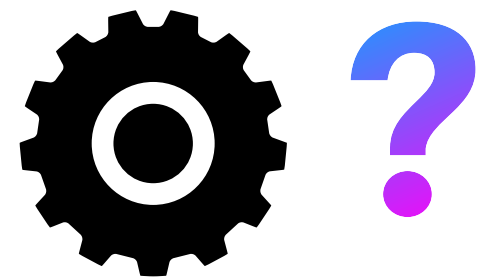
Vertical Integration

- Cost
- Resilience
- Security

The Future is Bright for Chips



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Democratize Innovation
through EDA 2.0

Autonomous | Intuitive | Inspiring