CONDITIONS FOR SUCCESS IN AI

NVIDIA.

TOPICS

National Investment

Digital Base

Data Reverence

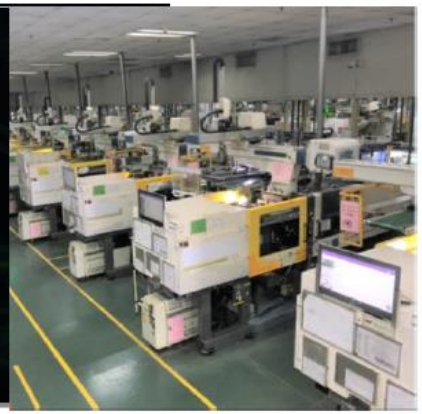
NATIONAL INVESTMENT

NATIONAL INITIATIVES OVERVIEW

AI is Important to Global Technology Leadership

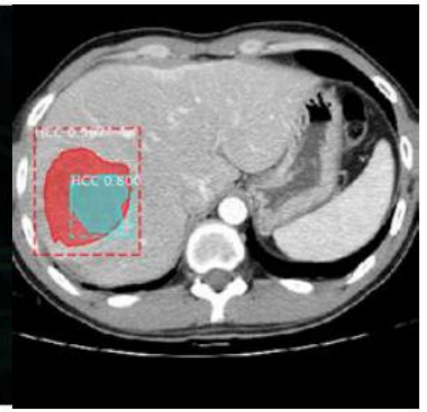
ECONOMIC IMPACT

AI Productivity Enhancements and Consumption side-effects are forecast to contribute $12T to the Global Economy.



INNOVATION LEADERSHIP

Public and Private sector investments on a massive scale. China and the US have established leadership positions.



INFRASTRUCTURE

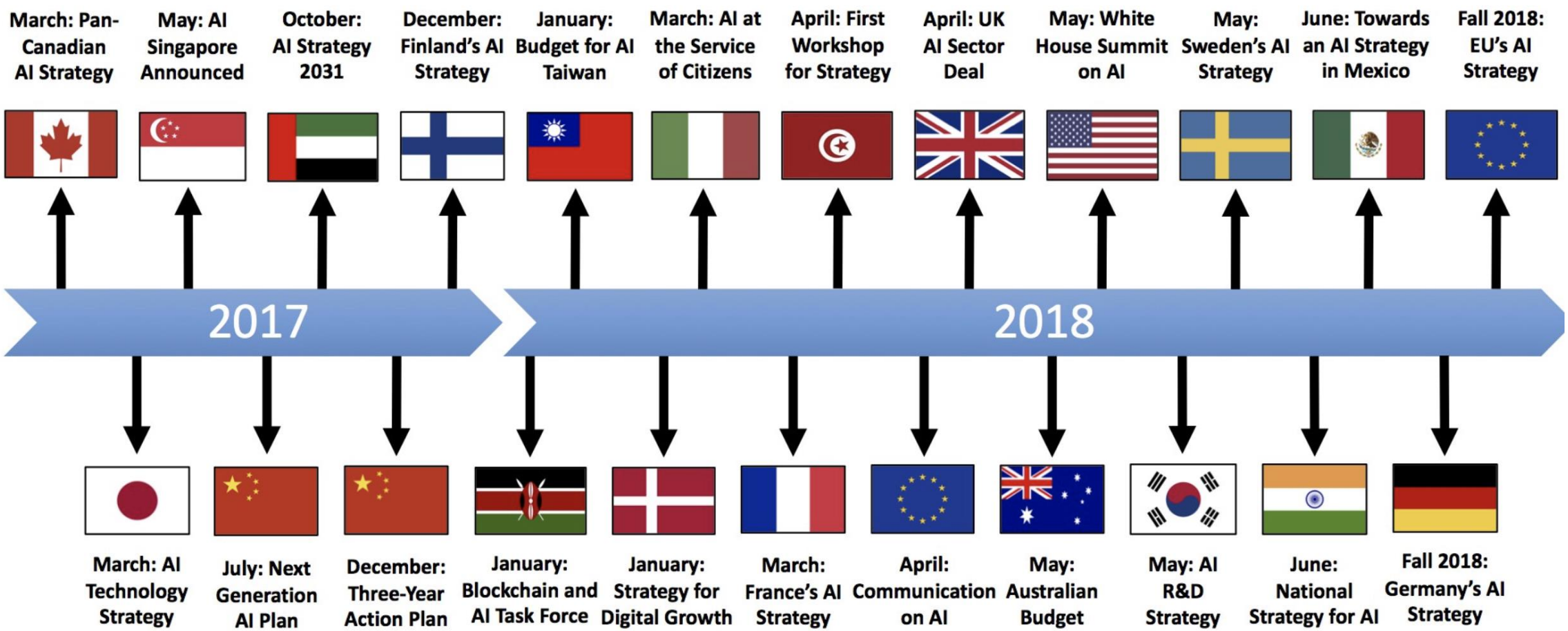
Large Scale Computing Infrastructure investments designed for AI & HPC.

SKILLS & EXPERTISE

Investments in Expertise Sharing & Training for AI Developers and Users.

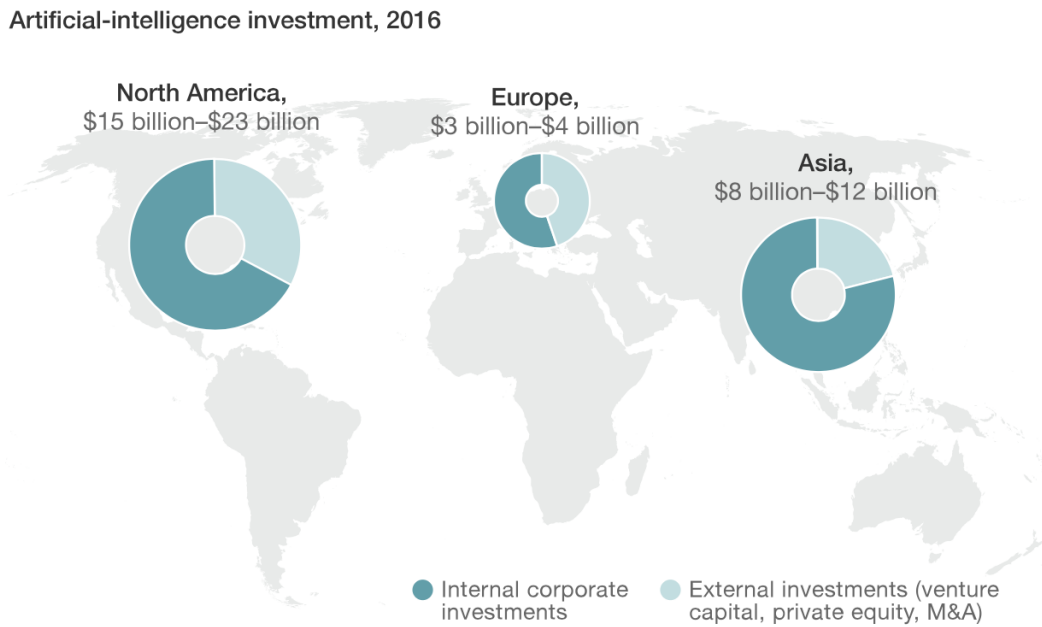
Sources: Notes from the AI Frontier: Insights from Hundreds of Use Cases, McKinsey, April 2018
Artificial Intelligence: The Next Digital Frontier? McKinsey, June 2017

NATIONAL STRATEGY RELEASES



GLOBAL INVESTMENTS IN AI

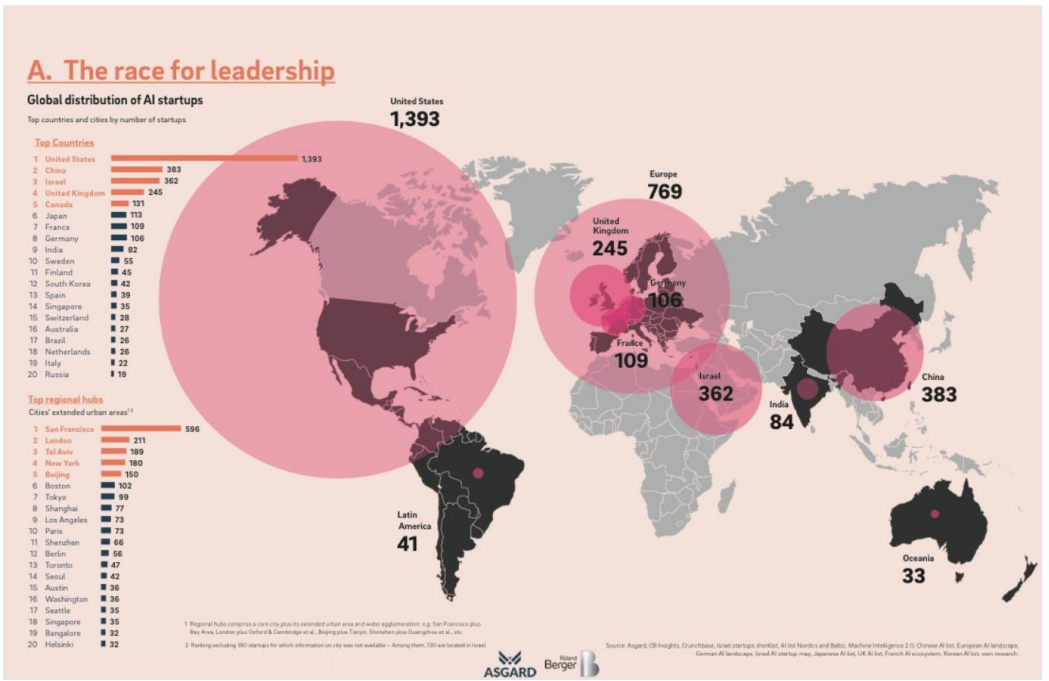
China and the United States dominate investments in artificial intelligence.



McKinsey&Company

HOW WE COMPARE

Start-ups and Hubs



Summary of conclusions:

- *The US is the global market leader for Artificial Intelligence with 40% market share*
- *China (2nd) and Israel (3rd) have the next strongest AI ecosystems*
- *Most other countries lack the needed combination of research, entrepreneurship, funding and M&A to build a sustainable and competitive AI ecosystem*

Source: Global Artificial Intelligence Landscape: Asgard—Human Venture Capital for Artificial Intelligence (Berlin). 22nd May 2018

DIGITAL BASE

DIGITAL AGE

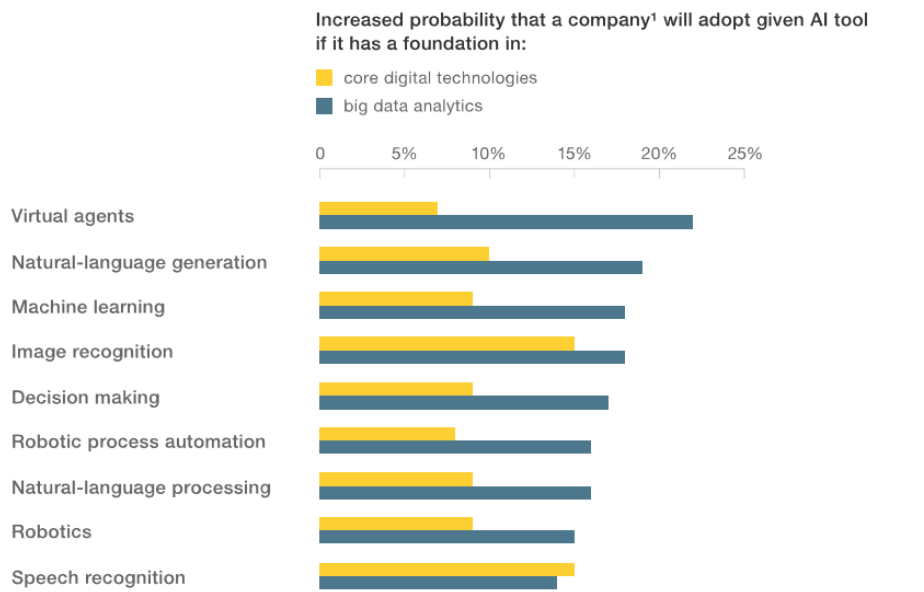
Winners & Losers

DIGITAL BASE

Critical Foundations for AI

- Core Digital Technology
  - Cloud Computing
  - Mobility
  - Web
- Advanced Digital Technology
  - Big Data
  - Sophisticated Analytics

Companies with a strong base in core digital technologies and big data analytics are more likely to have adopted an array of AI tools.

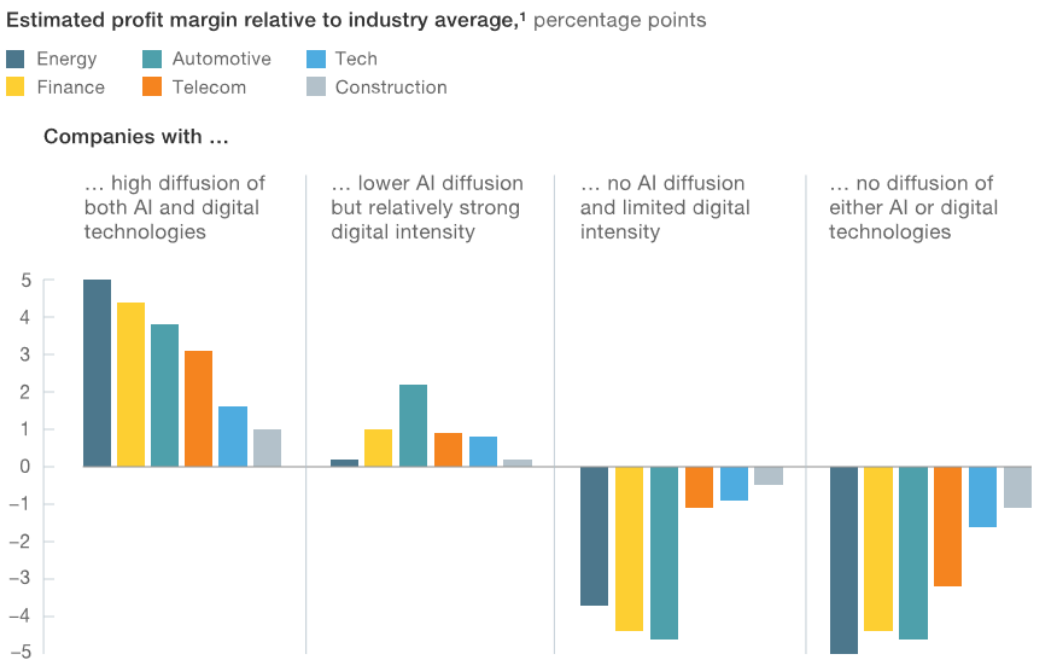


[1]Sample sizes vary by technologies, but each assessment of technology adoption is based on >1,300 survey responses.
Source: 2017 Digital McKinsey survey of 1,760 companies; 2017 Vivatech survey of 3,023 companies

DIGITAL BASE

Beneficial Impact

Power users that invest in both core and advanced digital technologies see a boost in profits.



[1]Sample size for each industry reflects >60% of survey responses.
Source: 2017 Digital McKinsey survey of 1,760 companies; 2017 Vivatech survey of 3,023 companies

GUIDING PRINCIPLES FOR AI

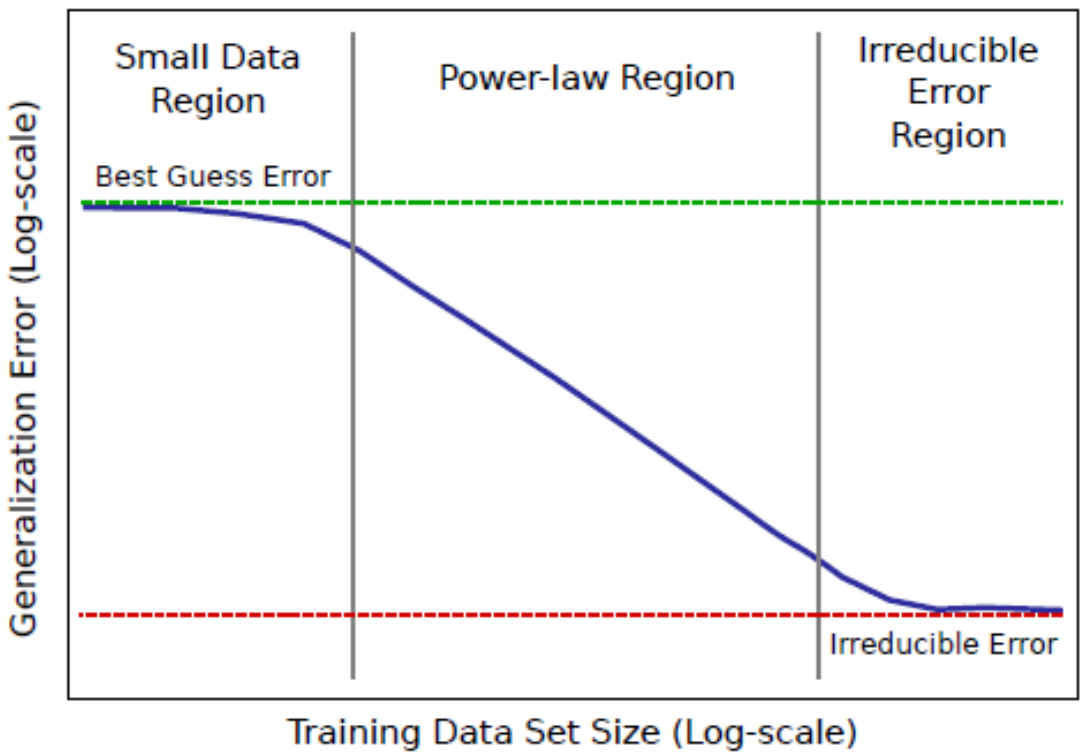
Digital Addendum

- Define the user need, the value proposition and be transparent and accountable about what data is being use and ensure you show evidence of effectiveness for the intended use
- Show the type of algorithm being developed or deployed, the evidence base for using that algorithm, how performance will be monitored on an ongoing basis and how performance will be validated
- Be transparent to the limitations of the data used, using data that is proportionate to the identified user need
- Make security integral to the design
- Create an environment that enables safe experimentation, collaboration and innovation
- Strive for interoperability and openness, make use of open standards
- If procuring, define an appropriate and informed commercial strategy

ATTITUDES TO DATA

EXPLODING DATASETS

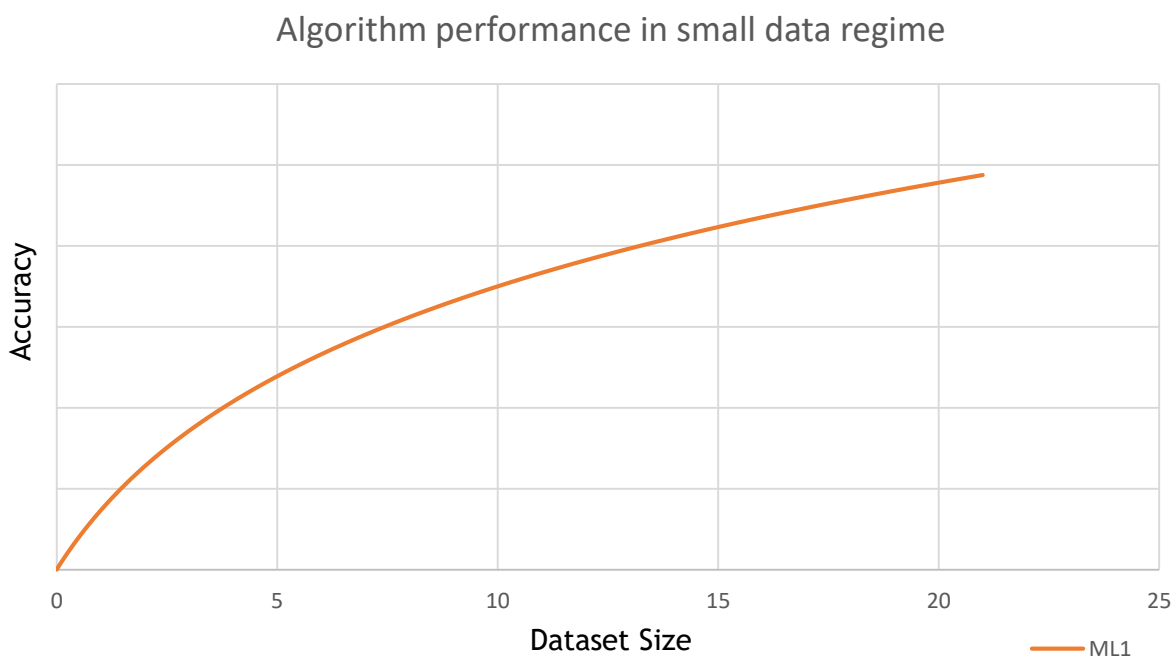
Logarithmic relationship between the dataset size and accuracy



Hestness, J., Narang, S., Ardalani, N., Diamos, G., Jun, H., Kianinejad, H., ... & Zhou, Y. (2017). Deep Learning Scaling is Predictable, Empirically. arXiv preprint arXiv:1712.00409.

NEURAL NETWORKS ARE NOT NEW

They just historically never worked well



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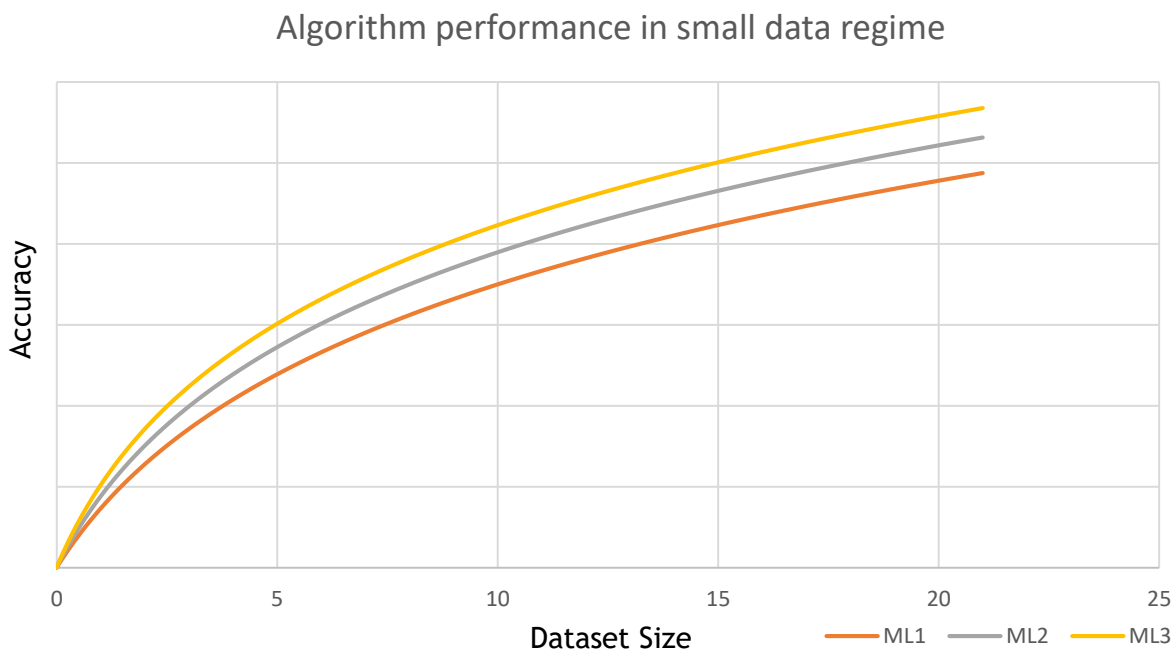

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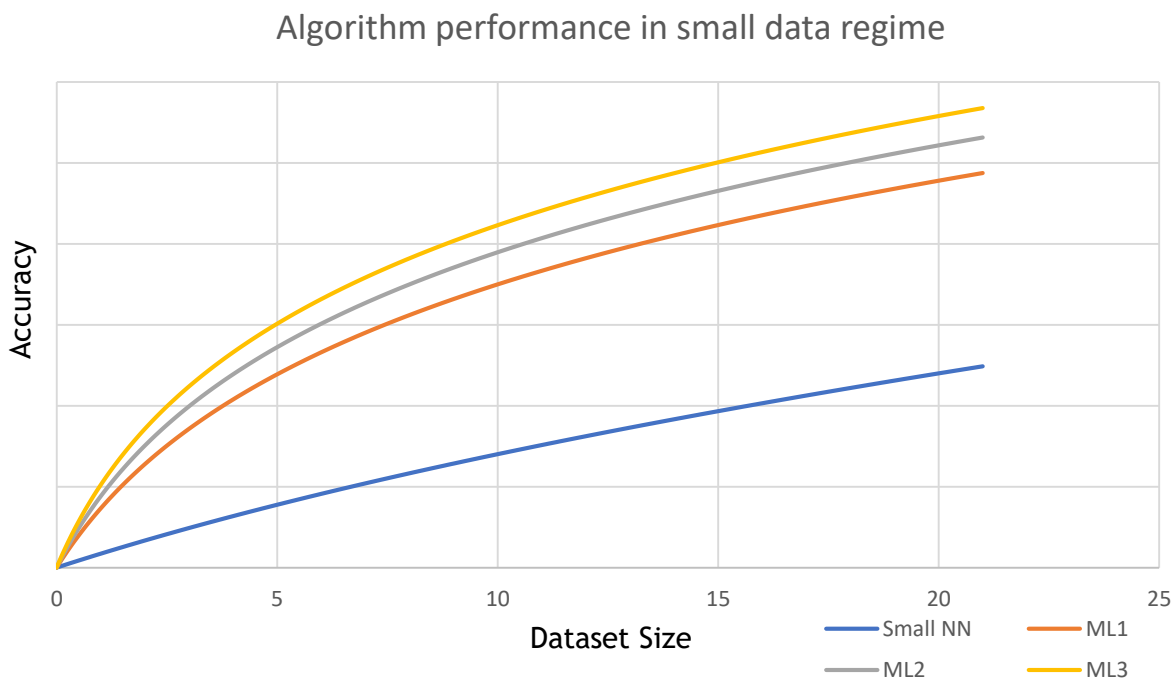
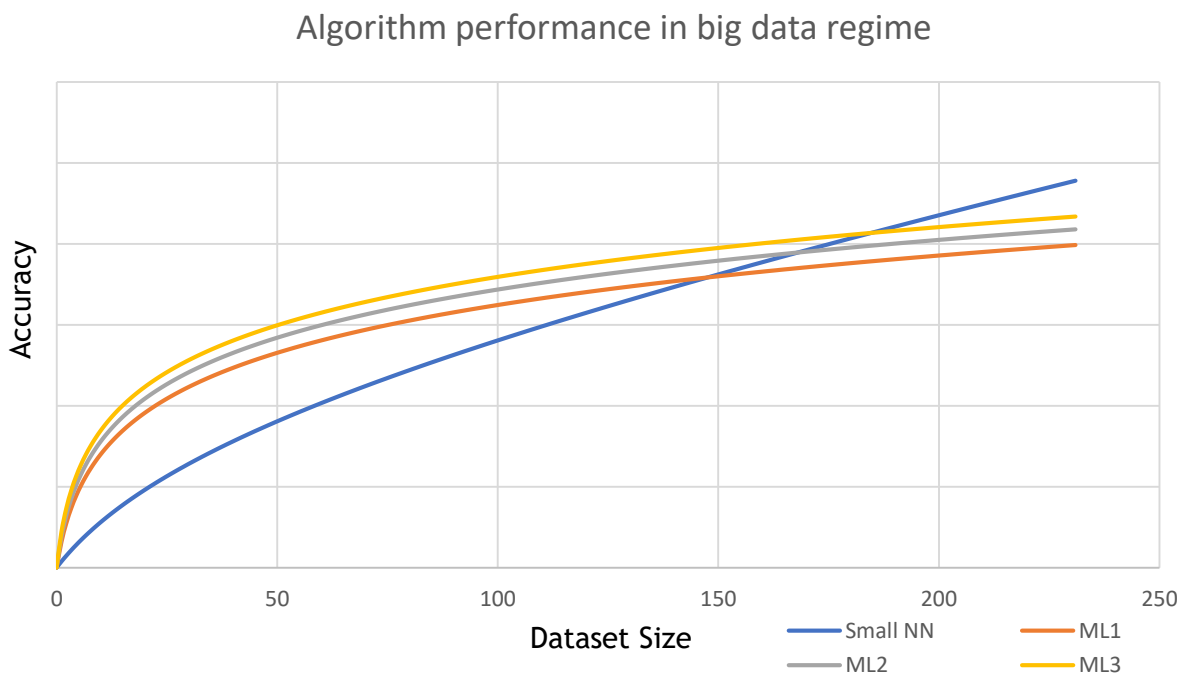


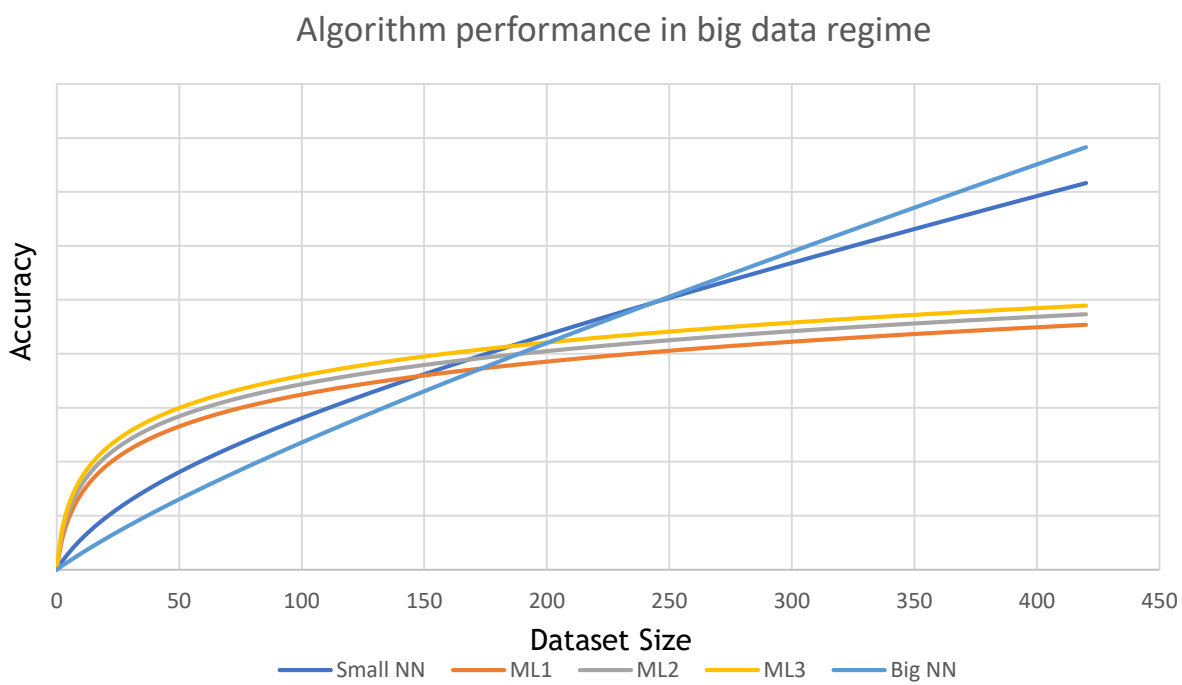
NEURAL NETWORKS ARE NOT NEW

Availability of data and compute



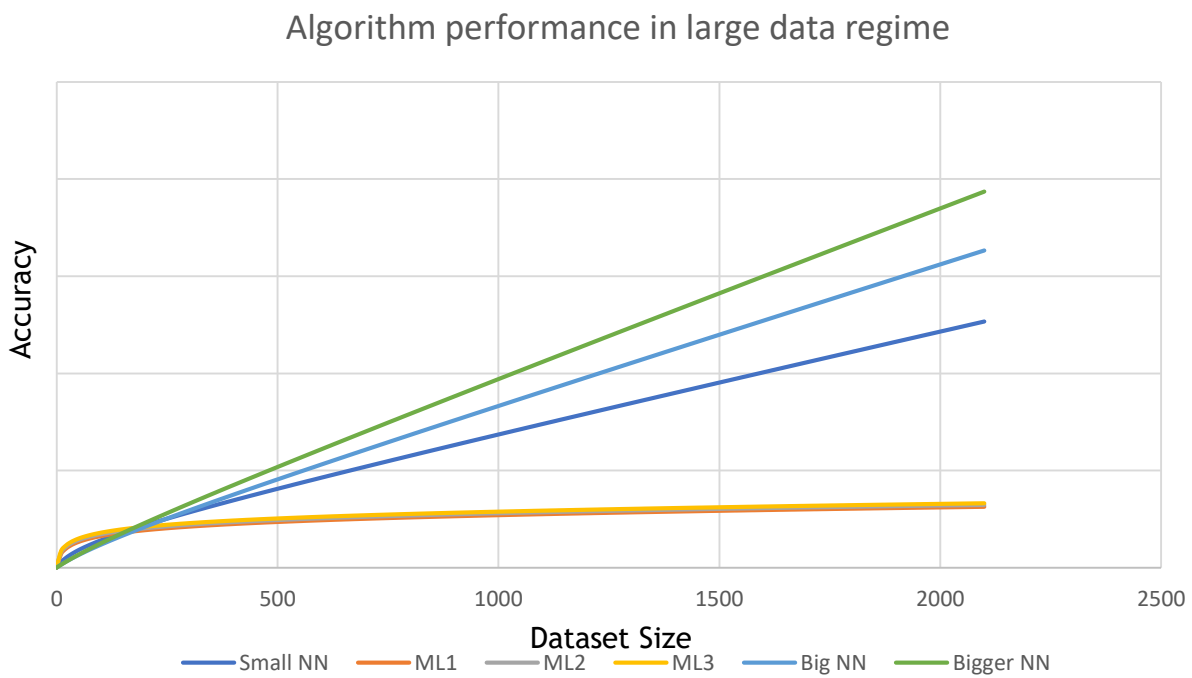
NEURAL NETWORKS ARE NOT NEW

Data and model size are the key to accuracy



NEURAL NETWORKS ARE NOT NEW

Surpassing human-level performance



WHY DATA GOVERNANCE FOR AI

3 Key Factors

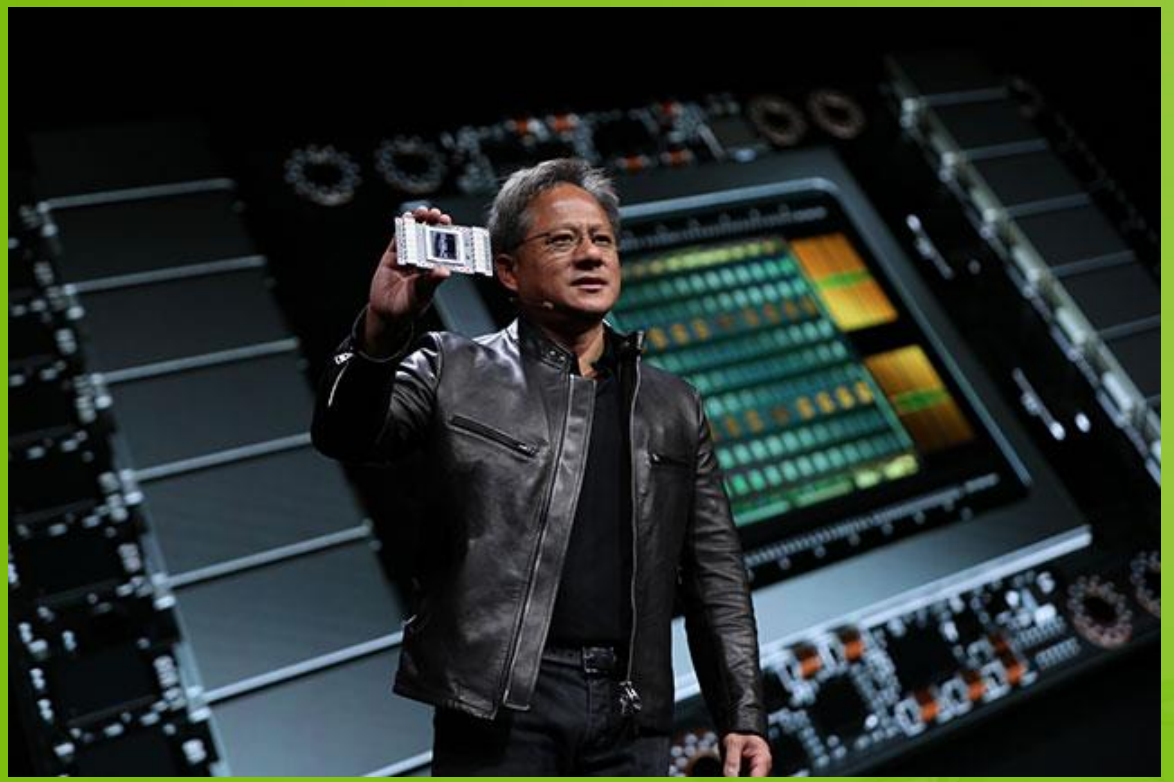
Data accessibility: The ability to get the right data when it is needed.

Data confidence: How confident an organization is of the quality, accuracy, and security of its data.

Data activation: The ability to act on collected data.

“DATA IS THE NEW SOURCE CODE”

JENSEN H HUANG
NVIDIA FOUNDER & CEO

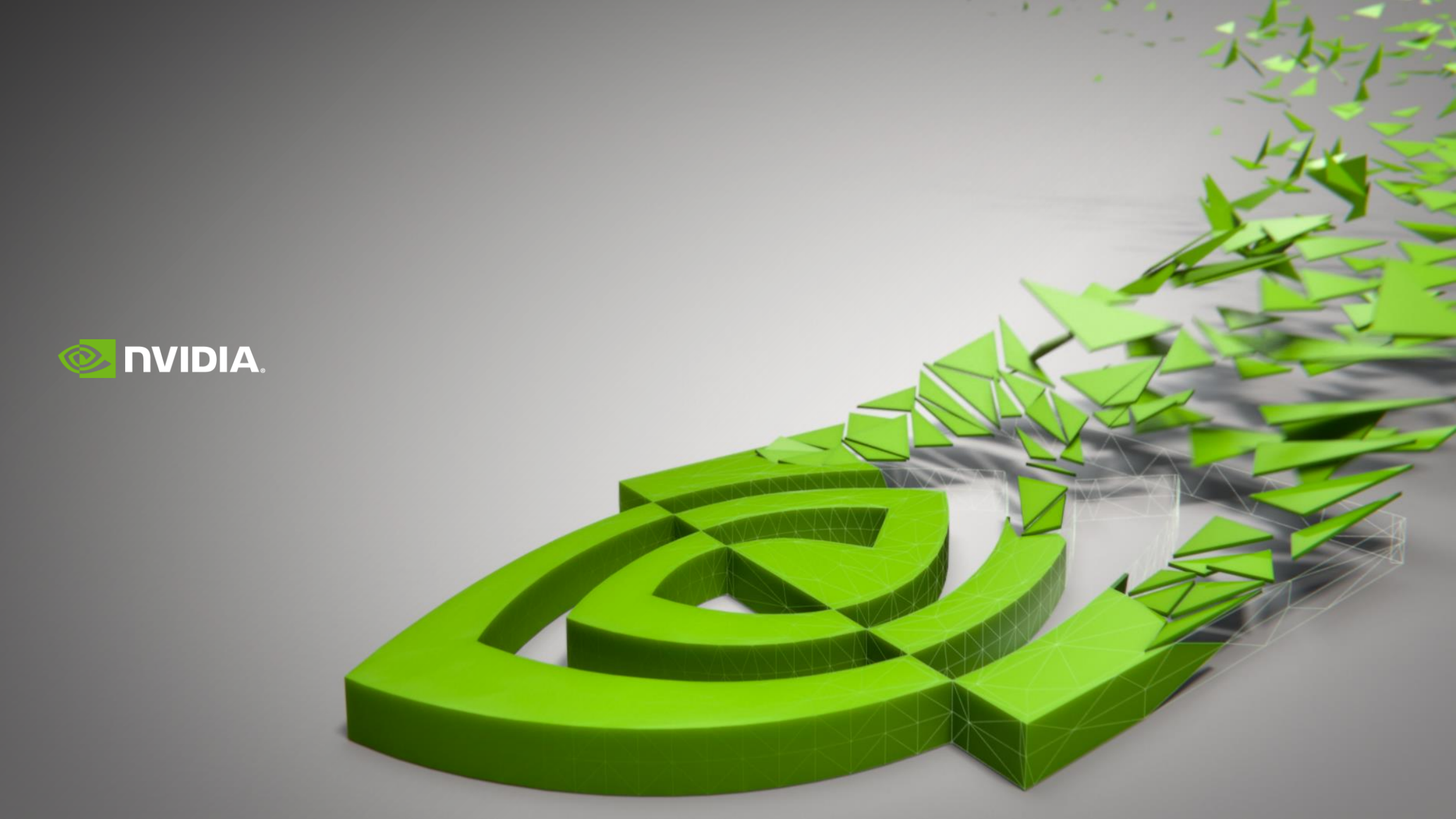


KEY POINTS

National investment creates the macro conditions for success

A mature Digital Base is a must-have to derive benefits from AI across the Enterprise Level

Treat data the same way you treat your most precious source code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