

Philip Lessner
YAGEO CTO



Artificial Intelligence (AI)

- What is it?
- Why now?
- AI challenges
- YAGEO's role

A photograph of Sundar Pichai, Google CEO, speaking with his hands raised. The background is a blurred image of the Google logo and a computer keyboard.

“Artificial intelligence is one of the most profound things we're working on as humanity.

It is more profound than fire or electricity.”

-Sundar Pichai, Google CEO

What Is Artificial Intelligence (AI)?

The evolution of
artificial intelligence

Artificial Intelligence

The simulation of intelligent behavior on machines.

Machine Learning

A type of artificial intelligence (AI) that provides computers with the ability to learn a model from data and then generalize that learning to new data.



Training

Prediction
(Inference)

Artificial Intelligence (AI)

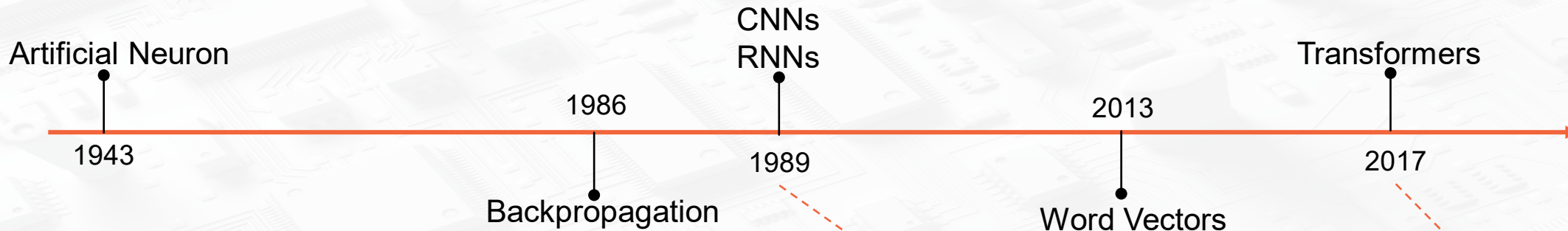
Machine Learning (ML)

Deep Learning (DL)

1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015 2020

Why Now?

Algorithms

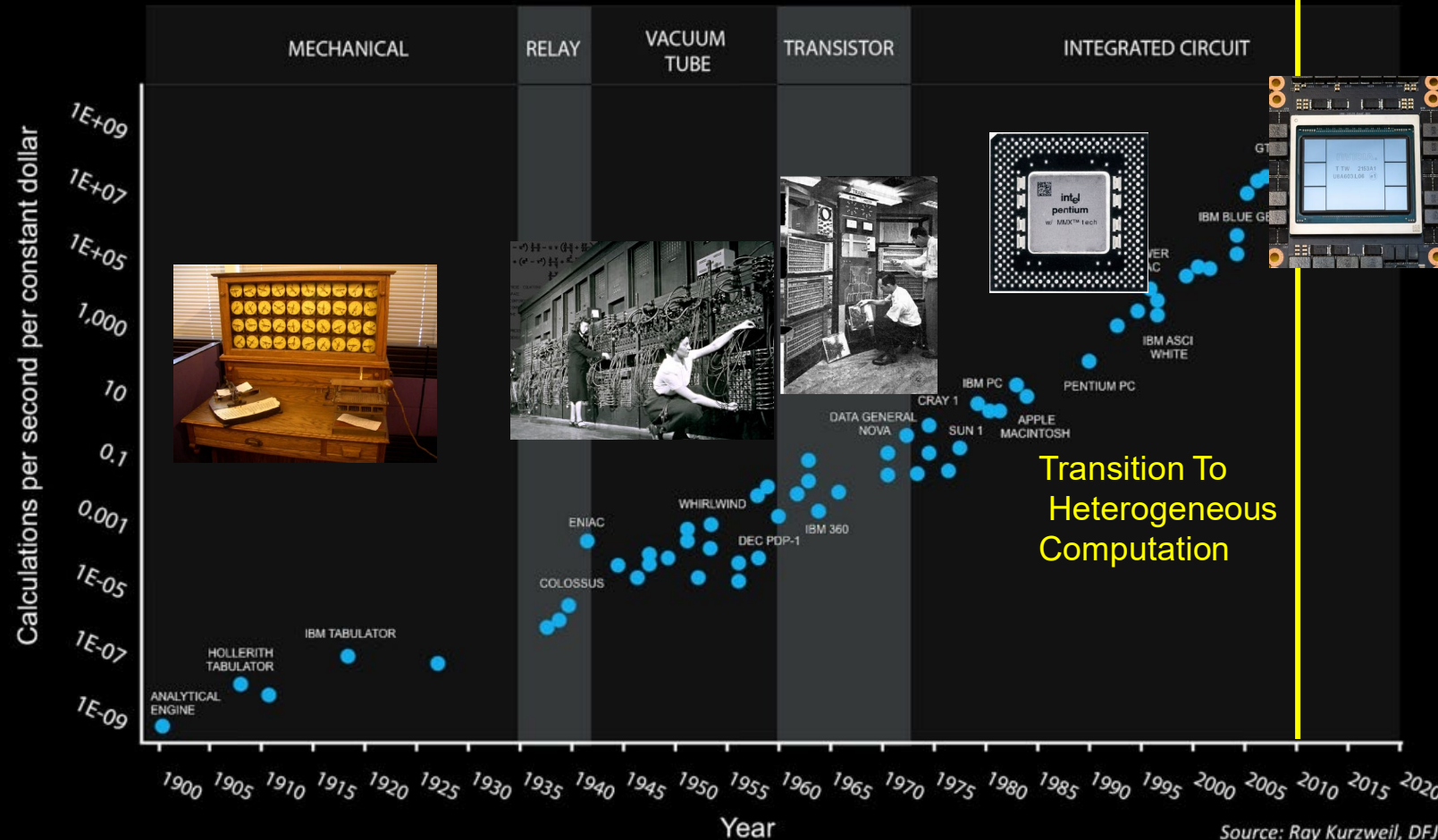


Applications



Why Now? Compute

120 Years of Moore's Law

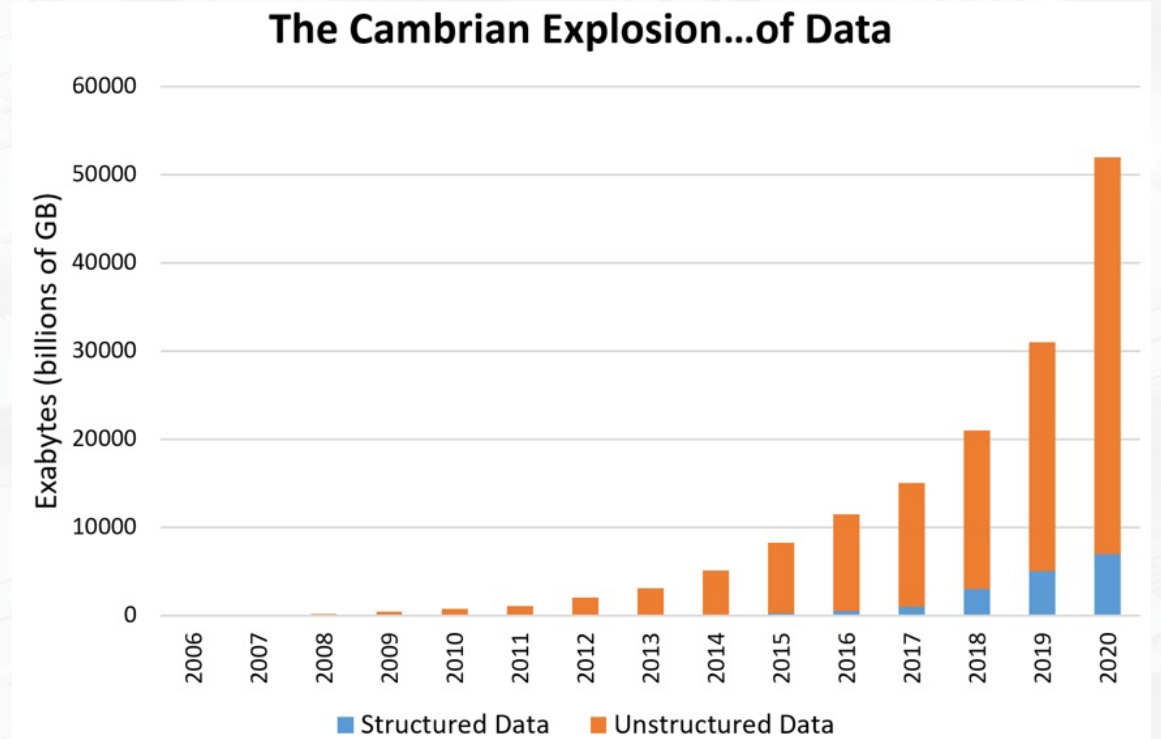
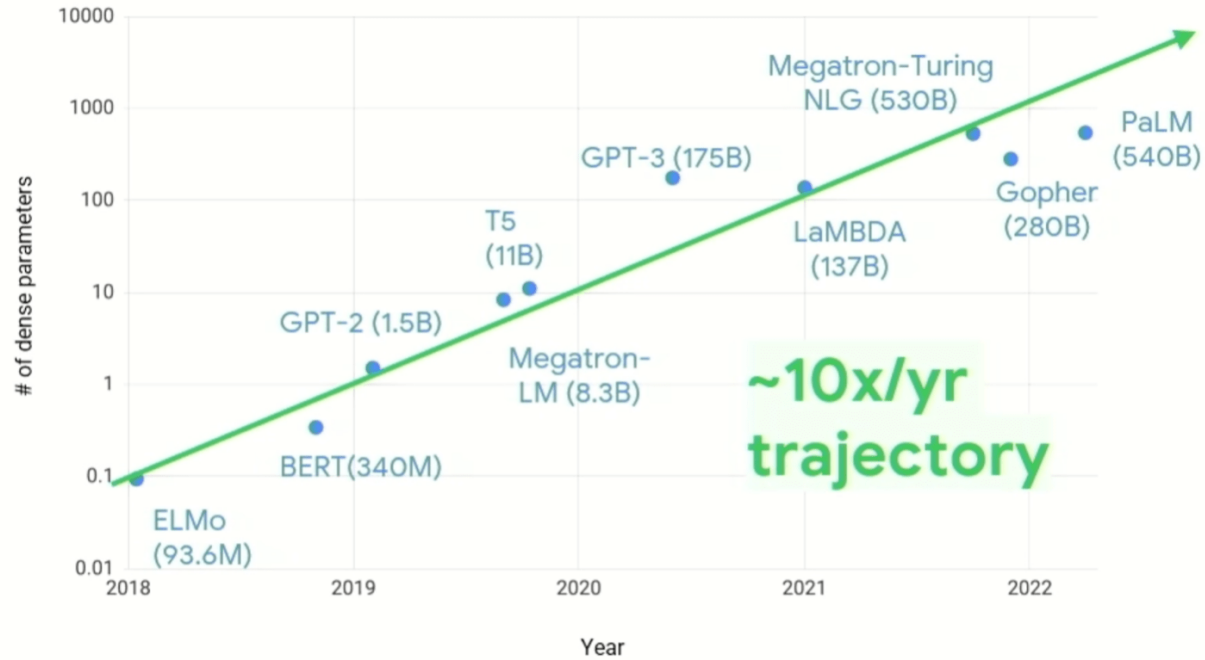


Why Now?

Data

“We don’t have better algorithms; we just have more data.”
--Peter Norvig,
Senior VP, Research
Google

Number of Model Parameters



Power Trends

The Human Brain
Uses 20W of Power



Energy from Data Centers
3% of Global Power Grid

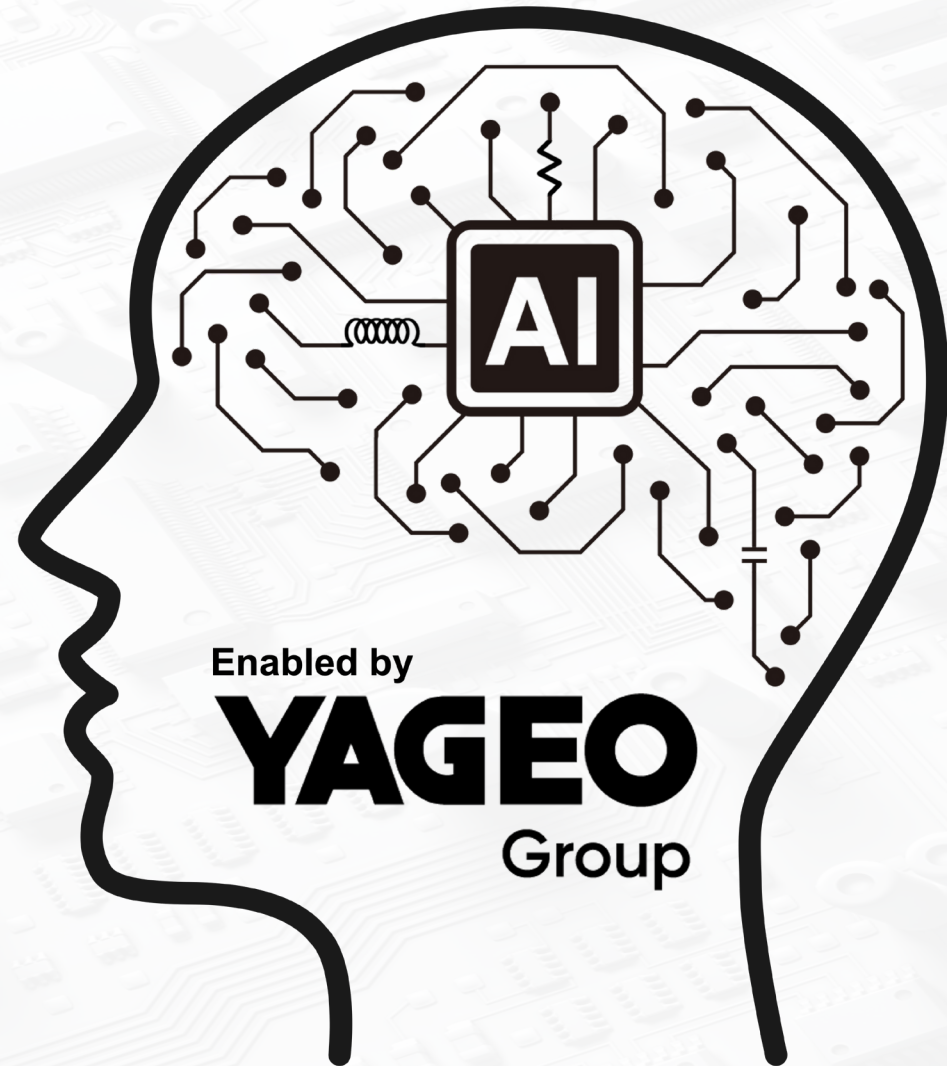
Software Like ChatGPT Has Accelerated That Trend

Cloud Servers
Need MWs



- Cloud Servers: 300W
- AI Servers: >1000W
- A **single** AI training run consumes about the energy of 120 households in a year
- Even a 1% savings in energy use by AI is significant

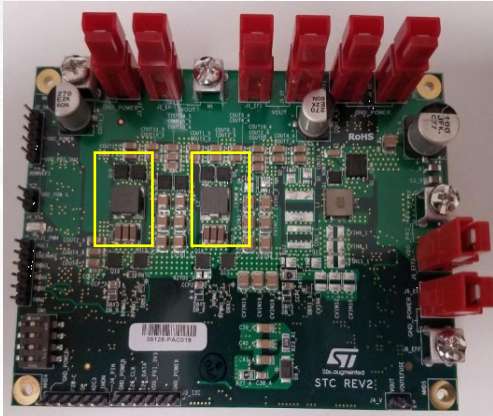
YAGEO's Role



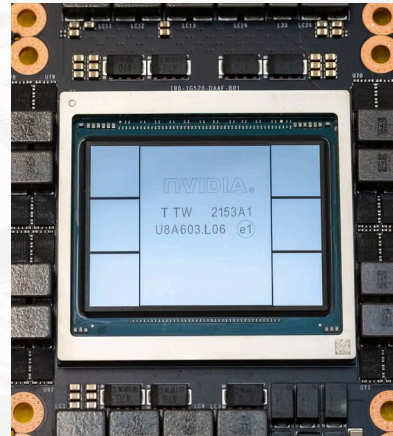
- Lower Loss Components
 - Energy Savings and 🔥
 - NANOMET Inductors
 - U2J/C0G MLCCs
 - Low ESR Tantalum-Polymer
- 48V Systems
 - 50, 63, 75V Components
- Higher reliability components
- Compatibility with Immersion Cooling

Some YAGEO Successes

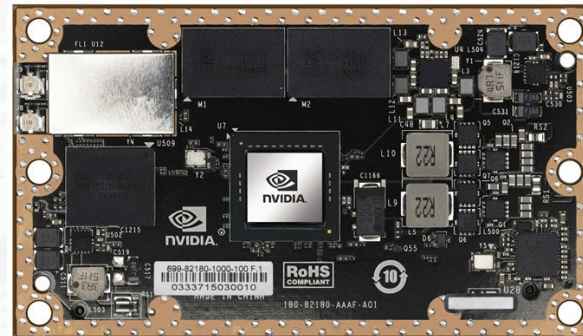
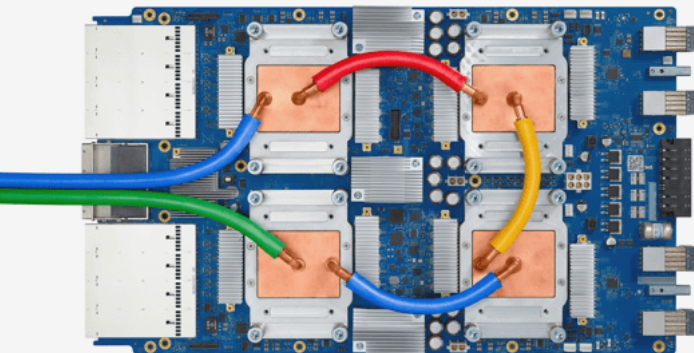
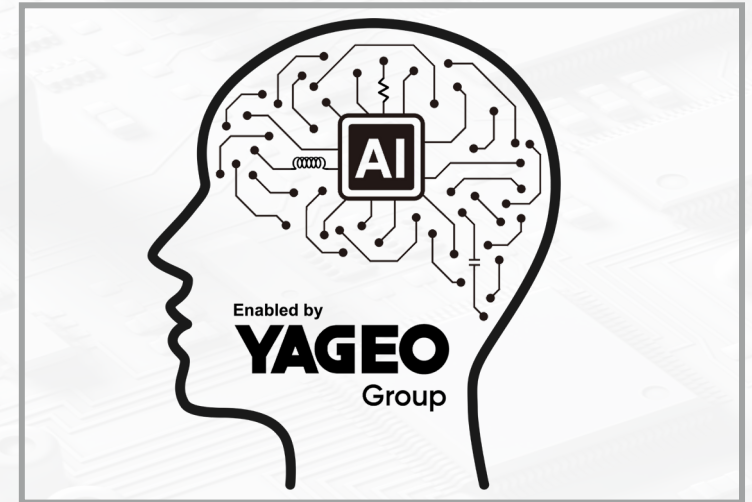
Google



Nvidia



The Future





YAGEO

Group

Thank You
感謝您

philip.lessner@yageo.com

Mobile: +1-864-350-3563



WWW.YAGEO.COM